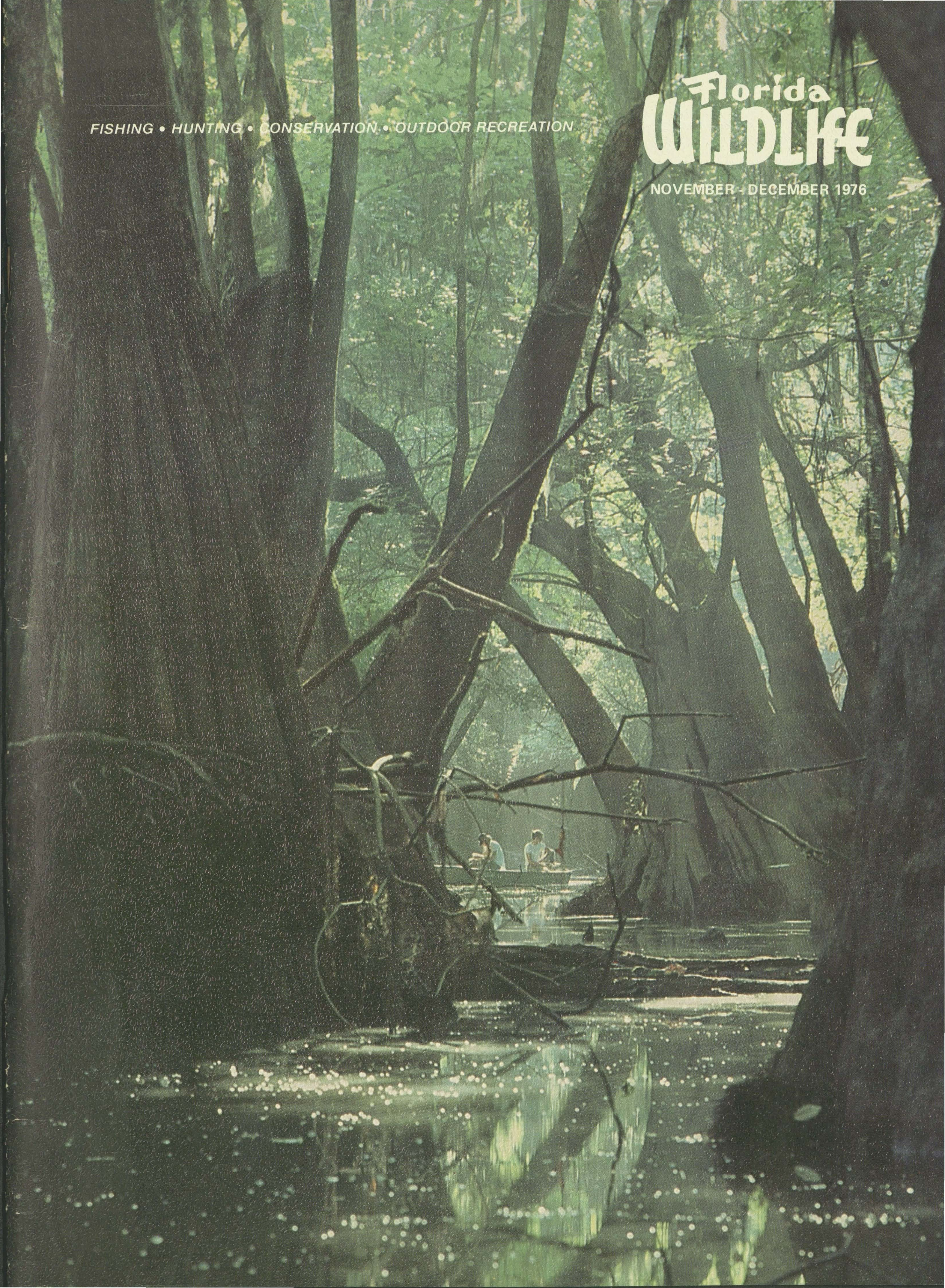


FISHING • HUNTING • CONSERVATION • OUTDOOR RECREATION

Florida WILDLIFE

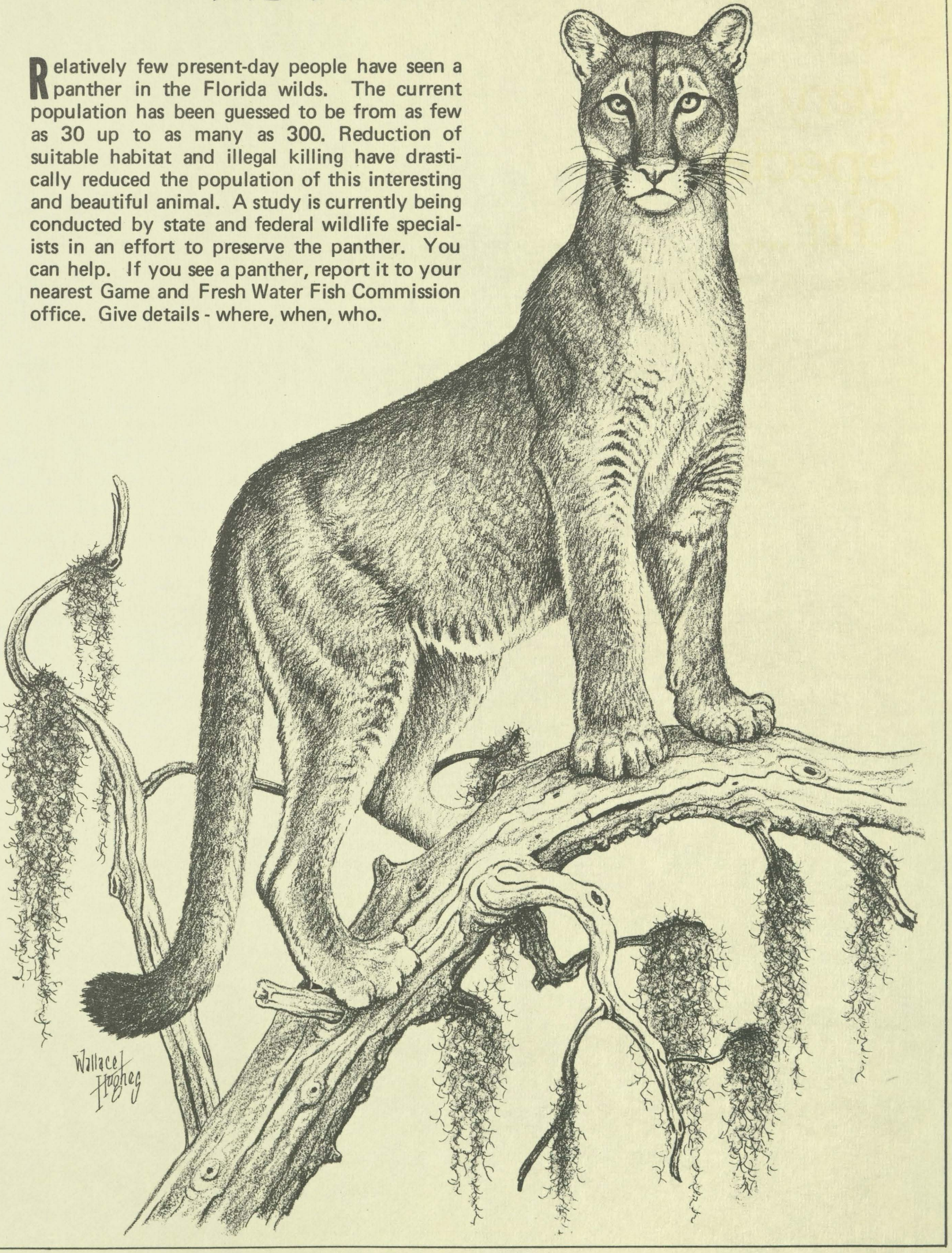
NOVEMBER - DECEMBER 1976

Florida Wildlife Scrapbook

ENDANGERED FLORIDIAN . . . . .

THE PANTHER

Relatively few present-day people have seen a panther in the Florida wilds. The current population has been guessed to be from as few as 30 up to as many as 300. Reduction of suitable habitat and illegal killing have drastically reduced the population of this interesting and beautiful animal. A study is currently being conducted by state and federal wildlife specialists in an effort to preserve the panther. You can help. If you see a panther, report it to your nearest Game and Fresh Water Fish Commission office. Give details - where, when, who.



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The Cover

It's a magic sort of world to the knowing fisherman and hunter, the big Apalachicola River swamp. But its future hangs in the balance. See page 21.

Photo by William Greer

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Photo by Greg Williams

Although the lab is often thought of as a waterfowl specialist, as on opposite page, the breed takes with enthusiasm to upland game work—pheasant, in the case of dog at left.

finding and recovering fallen game is the forte of these specialists

RETRIEVERS

By SILKY MONTALBANO

A PAIR OF WOODIES BANKED STEEPLY in response just as the final notes of the highball call trailed away from the cattails. Approaching from the west, they made a swing 60 yards out, and, with wings cupped, began their slide into the wind toward the decoys. With the woodies still 40 yards out, five bluewings, skimming the cattails, burst over the opening.

C. D. Strait, Jr., of Marietta, Georgia, just couldn't stand it any more. His Browning autoloader belched twice. A bluewing hen crumpled and fell among the decoys. The wood duck drake folded almost simultaneously, but his lady was rapidly grabbing sky. An express load of number six clipped her right wing. Two down for keeps and a strong cripple in the cattails 80 yards away.

Strait's young female lab, Rocky, was up on the boat seat, ears up, eyes locked on the blue-winged teal hen bobbing among the decoys. Excited by the two birds that had splashed right down in front, she had failed to mark the cripple in the cattails. Heeling her around, Strait calmly gave the dog a line toward the cripple. On command, she bolted over the gunwale of the hunting skiff. The young retriever's route to the cripple carried her out on a fine angle off the line to the wood duck drake. Thirty yards from the skiff, Rocky spotted the dead drake and turned toward it. A quick whistle blast followed by a hand signal got her right back on course. She held her line to the far side of the pond, then disappeared into the cattails after one last hand signal.

Strait and his hunting companion, Commission Wildlife Biologist Frank Montalbano, of Lakeland, waited anxiously as Rocky hunted among the cattails. Ten minutes later, she emerged from the cover with a live-and-kicking woody held firmly in her mouth.

That retrieve, an 80-yard "blind" past two "diversion marks," may not seem much different or more difficult than countless thousands performed by well-trained retrievers each season. One factor made this, and the 17 other retrieves Rocky made that day, really stand out. These retrieving feats were not performed in your average duck pond or marsh pothole. Strait and Montalbano had set their decoys on one of the many phosphate slime pits which dot the central Florida landscape.

Slime pits are settling basins for by-products of the phosphate mining industry. The "slime" is a clay solution which approximates the consistency of vanilla pudding. As a result, the 80-yard effort on this last series of retrieves differed considerably from the 3- to 4-minute swim required to cover the same distance in the average duck marsh. In contrast, it took nearly 20 minutes for the young retriever to cover the distance in the slime. She had been out of the boat 15 times already that morning. Yet she would hit the slime with enthusiasm twice more before the hunt was done.

Frank Montalbano, my husband, related the details of this performance to me. Frank has spent his share of time in duck blinds in the coastal marshes of his native Texas, here in Florida, and a lot of places in between during a 5-year hitch in the Air Force. He's watched a lot of dog work, both from the duck blind and as a judge in AKC-licensed retriever field trials. He's trained several retrievers himself to the finished gun dog stage, and is training a couple of young wild ones now. In short, he knows enough about good dog work to avoid being easily impressed. Even as he related this story, he shook his head almost in disbelief. But the two 9-bird bag limits he and Don Strait brought in, and the generous coating of slime on boat, decoys, birds, hunters, and—heaven forbid—hunting clothes, served to substantiate his story.

By now, you're probably convinced that my purpose is to fascinate you with wonder dog tales reminiscent of Lassie and Rin Tin Tin. Fact is, I'm just sold on retrievers and want to share some thoughts and experiences on this subject with you. These wonderful breeds make excellent family dogs, and their use as guide dogs for the blind and by police agencies for bomb and drug detection lend testimony to their versatility. But I'm convinced that their value as working breeds for waterfowl hunting is their strongest and most interesting selling point.

The American Kennel Club recognizes five breeds of "retriever" and the Irish water spaniel among the breeds eligible for its retriever field trials. Labradors, goldens, and Chesapeake Bay retrievers have established themselves solidly as the most popular breeds in the United States. Curly-coated retrievers, Flat-coated retrievers, and Irish water spaniels are generally less widely used in this country.

Bird dog enthusiasts often express skepticism concerning the need for a dog just for retrieving. Without question, any reasonably intelligent dog can be trained to fetch. Some, regardless of breed, can become quite proficient at it. The whole concept of development of separate breeds of dogs is based

(continued on next page)

Photo by Wallace Hughes

(continued from preceding page)

upon the principal that through selective breeding, specific characteristics can be refined and developed. Retrievers have been bred through countless generations for the qualities that render them specialists at finding and recovering fallen game.

The hunter whose ultimate success is dependent upon recovering downed game need look no further in selecting a hunting companion. Day in and day out, these dogs have no peer in the ability to locate and bring to hand those troublesome birds in the bush. This ability is especially evident when the task is compounded by adverse conditions such as the tough going in a slime pit or typically atrocious duck hunting weather.

I don't mean to imply that these are just duck dogs. Retrievers earn their keep and then some in dove fields, especially when the birds are falling in cover. And a good wagon dog, one trained to retrieve quail, has added more than a few downed bobwhite to the bag after big-running bird dogs have moved on to the next cover.

The myths and stereotypes associated with the various breeds are even more numerous than the number of breeds. Chesapeakes are viewed as rugged, courageous critters that need a firm trainer. Labs are reportedly stylish in their work, businesslike in their approach, and readily trained. Goldens, by reputation, are elegant to behold, and most responsive to affection. In reflecting on these traditional character traits I can only comment, "Bunk!" Goldens can be tough, and Chessies can be affectionate. As a Lab owner, there's probably just a wee bit of prejudice in my belief that Labs can be all things to all people. So if you're interested in a retriever, weigh the obvious variables, such as long-haired versus short-haired dogs, then just follow your fancy. Regardless of breed, a retriever selected from quality field trial lineage, or from proven gun dog ancestry, should, with proper training, provide years of satisfying service and companionship.

There are two avenues available to the sportsmen interested in acquiring a retriever. The simplest approach is to purchase a finished gun dog from an owner or trainer of good reputation. This is usually costly. The other obvious avenue is to buy a young pup, and to develop the discipline required for quality performance in the field.

Since most prospective retriever owners acquire their dogs as pups, a few comments on puppy selection should be of interest. We know from elementary genetics that the percentages favor pups bred from lines of consistent performers. The neophyte dog buyer's dilemma is, "How do I know whether or not a particular pup comes from good stock?" The problem is compounded by the fact that most breeders, being good salesmen, are quick to boast of the fantastic qualities in their litter's pedigree.

The strict standards of performance required by the American Kennel Club in its licensed retriever field trials provide a convenient yardstick for measuring the quality of working retrievers. Dogs which excel in this competition earn titles of "Field Champion" or "Amateur Field Champion." These titles, abbreviated FC and AFC respectively, appear as prefixes to the names of dogs which have earned them. The presence in a pedigree of a substantial number of dogs bearing one or both of these titles provides the buyer with assurance that a pup comes from proven bloodlines. One word of caution. Dogs competing in dog shows earn points toward the title "Champion" (abbreviated CH). This title is based solely upon conformation, or appearance. It does not imply desirable working dog qualities.

Of course, a quality pup need not come from field trial stock. Fine gun dogs transmit their qualities to their progeny just as readily as do field trial competitors. What is important is that the pup be

Photo by Greg Williams

selected from proven bloodlines. Don't fall victim to idle boasts from disreputable breeders.

The *Retriever Field Trial News*, published 10 times a year by the National Retriever Club and the National Amateur Club, regularly lists a number of litters. Copies of this publication can be obtained from the *News* offices, at 4213 S. Howell Avenue, Milwaukee, Wisconsin 53207. Rates are $15.00 (Annual) and $1.55 (single copies).

Once you've acquired that new pup, you'll want to give him proper training. Quality retriever work is the perfect compliment to a days gunning. But nothing spoils a day afield quite like the tribulations of an untrained, unruly dog. Your retriever should instinctively possess the qualities which enable him to accurately mark falls and seek out fallen game. Your task is to train him to basic obedience, and condition him to be steady to wing, shot, and the numerous other distractions encountered in the field. Advanced training prepares the dog for blind retrieves—taking directions and hand signals from his handler to find birds which he did not see fall. The ability to handle blind retrieves in conjunction with multiple falls is the mark of the finished gun dog.

The technique required to develop these skills in a dog doubtless seems complicated. In fact, it's much simpler than you think. Several books are on the market which furnish helpful hints on training. *Training Your Retriever*, by James L. Free (Coward, McCann and Geoghegan, Inc., New York) is most helpful for the beginner. After you've worked with the dog a bit, you'll find *Charles Morgan on Retrievers*, edited by Ann Fowler and D. L. Walters (October House, New York) an invaluable guide to advanced training and problem solving.

The owner who lacks the time or the inclination to train his own dog can rely on the professional trainer. For best results, most knowledgeable retriever people recommend a trainer who specializes in retrievers. Paul and Barbara Genthner, of Tealbrook Kennels, in Tallahassee, and John Broom, of Phantomshire Kennels, in Archer, are among the better known pros in Florida. H. G. Sheriff operates Ja-Gee Kennels, just to the north in Pavo, Georgia. Jim Robinson, of Warpath Kennels, in Covington, Georgia, has recently made notable progress with several north Florida dogs.

No discussion of retrievers would be complete without a discussion of retriever field trials and the trial-sponsoring clubs. The North Florida Retriever Club, at Tallahassee, and the Jacksonville Retriever Club are licensed by the American Kennel Club to conduct formal, championship retriever trials in Florida. In addition to two annual formal trials, each club conducts numerous informal, fun trials each year, as well as occasional training clinics. Club activities provide Floridians with the opportunity to view some of the finest retriever work in the country. More important, they furnish the novice trainer the chance to meet and obtain assistance from knowledgeable amateur trainers. Retriever field trial people are among the most cordial and receptive sportsmen you'll ever meet.

One of five AKC recognized retriever breeds is the golden, a popular choice of many hunters and field trial enthusiasts.

Advanced training and the efficient conduct of trials is dependent upon the availability of an enthusiastic crew of helpers. Introduce yourself around, and before you know it, the club might even put you to work. In return for your efforts, you'll have the benefit of meeting and training with people whose assistance will be most valuable to you in developing your dog. The training tips you'll pick up, and the fun and camaraderie, will more than compensate for your effort.

In AKC-licensed retriever trials, dogs are grouped for competition into four classes, called stakes. The derby stake, limited to dogs under 2 years old, is designed to evaluate natural qualities and skills acquired through basic training. Age restrictions are not imposed for entry in the three remaining stakes. The open all-age and amateur all-age stakes are for the most advanced dogs. The primary difference between the two is that only amateur handlers are permitted in the latter, while professional and amateur handlers alike compete in the open all-age stake. It is in these two all-age stakes that dogs earn points toward the coveted titles of field champion and amateur field champion. There is a qualifying stake for dogs of ability intermediate between the derby and all-age stakes.

For more information on retriever field trials and retriever clubs, write Mrs. James Higgins, Secretary, North Florida Amateur Retriever Club, 2915 Primrose Lane, Tallahassee, Florida 32303, or Mr. James F. Rentz, Secretary, Jacksonville Retriever Club, 5806 Lake Lucina Drive, South, Jacksonville, Florida 32211.

My husband tells a story about a bird hunting friend of his in Selma, Alabama, who just couldn't pass an opportunity to degrade all those “(expletive deleted) field trial dogs.” His experience with bird dogs had led him to the conclusion that field trial dogs were just too high-strung, fidgety, and far-ranging to be of “much account” for the walking hunter. He naturally assumed that field trial retrievers were the same. A single morning of mallard shooting in flooded timber on a backwater of the Alabama River, with my husband and a black lab with the unlikely name of Liza Le Blanc, changed that ol' boy's mind in short order. The tests which form the basis for retriever field trials are designed to simulate the conditions often encountered in a day's hunt. As a result, the performance of an all-age class retriever in the duck blind or dove field will defy the imagination. ●

The CHAIRMAN COMMENTS

By R. R. THOMAS

Each year with the advent of autumn, millions of Americans take to the woods in pursuit of their favorite sport. Whether hunting, fishing, hiking or camping, there is a common rule of the woods that applies to all: leave no sign.

By this I mean, simply, leave no sign that you have been there -- no trash, no spent shells, no damaged property. This courtesy towards the property of another is one of the best ways we have of keeping posted signs from ever getting up.

Since few of us own enough of the "wide-open spaces" to hunt on, we spend our fall days on someone else's land. While there, adherence to a few rules of common courtesy and good manners are in order.

Look at it like this: How would you like to invite someone into your home and then have them throw trash on the floor, grind cigarettes into the carpet, kick your cat and then leave with all the doors wide open? This is exactly the way some thoughtless sportsmen behave when granted the privilege of using another's land.

Part of the sportsman's ethic is consideration of the landowner's property. He is allowing you to use his land and you should treat it with the respect you would want towards your own.

There are a few simple tips to follow to maintain a cordial landowner/sportsman relationship, none of which take very much time and can only add to the enjoyment of the hunt, for both of you.

The first is to be sure and ask permission each and every time you go on another's property. Although you may have been told that you are welcome any time, it is always good to check in with the landowner and let him know when and where you will be on his property.

Just because you have been given permission to hunt, don't think that allows you to bring an army of buddies along. One or two pals might be all right, but not a platoon.

While hunting, respect the owner's rules. Be considerate of his crops, livestock and buildings. He has a large investment in his property which you should help protect. Watch where you walk, drive your vehicle, and especially where and at what you aim a firearm.

Exercise care when crossing fences, and be sure to shut and secure all gates you open. Leave all gates as you found them. One sure way to wear out a welcome is to make your host spend his time repairing stretched or broken fences or rounding up his livestock.

A true sportsman will also report to the proper authorities anyone damaging property or breaking the law. It might mean getting involved, but it is necessary if the future of the sport of hunting is to be preserved.

One of the last things to remember is simply to thank your host. Each time you prepare to leave his land, stop by and express your gratitude for the privilege he has given you. Share your game bag with him and perhaps send him a Christmas card.

Keeping the landowner happy is the only way to insure he will keep his land open to hunting. Good manners in the field can go a long way towards keeping those posted signs down for years to come. ●

A Painful Decision

we've made some great strides in learning the whys and wherefores of outwitting fish—it's likely that we've even gone too far

By CHARLES WATERMAN

FOR A LONG TIME we have been worrying about there being too many fishermen. Now we are worrying about their being too good. Too many fishermen that are too good can change the whole picture in a hurry.

As science and persistence snoop deeper and deeper into fish privacy it stands to reason that the fishermen are going to win in the end. After all, we are smarter than fish and now that we've really put our minds to it the game is getting pretty one-sided.

From the time Izaac Walton dunked worms for English trout until the boys came home from World War II there hadn't been much real advancement in fish *catching* methods. Oh, the rods, reels and lures had gotten better all right but there didn't seem to be much that was really new. We hadn't really learned much about sport fishing in the past 200 years.

Spinning tackle came along and made fishing more democratic because it was easier to learn than other gear. Some said it should be outlawed because we finally had a method that would clean out all the lakes and rivers. I was told in all seriousness that it was the end of the line for plugcasting, fly-fishing and even trolling.

Then came the heretical revelation that the black bass weren't all living along the shorelines. Most of them, the new prophets revealed, were sort of bunched up and lying around near the bottom and if you'd troll deep and fast you'd find where they were and you could then use any kind of tackle you chose. Some of us old mossbacks said we didn't want to do that kind of fishing. We'd still beat the shorelines. We did but we didn't catch as many fish as the new school.

The plastic worm then appeared as the most deadly bass artificial and is still developing. All of this time the other fish were having troubles too but it's hard to get away from bass because they are the most popular game fish and because they don't migrate much. We were getting their numbers pretty fast.

Spinning tackle, coupled to small jigs, produced a new ball game for saltwater fish and some of the most scientific operators of all use jigs, which have been developed in many directions. For thousands of years people had been jigging doodads up and down for fish but all of a sudden there were bookfuls of new jigging methods and all of them worked.

But the study of fish began to snowball and in the past 10 years we may have come farther than we did in the 10,000 years before that. Depthfinders were nothing new but when they began to use them on fresh water they developed fast. No use wasting your time with the new science of structure study and all that stuff because it's recorded in hundreds of books, thousands of feet of motion picture film and endless hours of lectures.

(continued on next page)

Photo by Mercury Motors

Once upon a time, overfishing with rod and reel was considered to be impossible. But now, with new methods, equipment, and a large, highly mobile, fishing population, overfishing becomes a real possibility.

(continued from preceding page)

Salt water was ahead of fresh on the use of electronic gear and all the time the bass business was going, the offshore lads were doing their thing too.

Now in rapid succession came instruments for testing oxygen content and water clarity. Thermometers for freshwater boats were developed and used and by now the fishermen knew what they were looking for. Divers went down there and studied fish. Many species were kept in tanks under observation of a type never bothered with before.

Last week I talked to a serious fish student, who is in the investigative business as well as sports fishing. He'd gone into the black bass habit of long loafing periods and brief periods of frantic feeding.

"I'm getting pretty close," he said without bragging. "A little more work and I think I can tell when they'll strike and when they won't."

Do you realize what that would mean to fishermen? And do you realize what that would mean to fish?

"Hook and line fishing," I used to pontificate, "will not hurt our sport. Watch the habitat and go easy on the commercial fishing and we'll always have enough fish."

Closed bass seasons, and even freshwater trout seasons, sort of went out of date. Size limits were a laugh to most fish biologists regarding most species. Only unscientific backwoods types worried about spawning beds.

Now the whole thing looks different. It's true that hook-and-line fishermen weren't much of a hazard in the old days. Now they are perfectly capable of deadly search-and-destroy missions.

When I first heard of a proposed measure in Minnesota that would make recording depthfinders illegal in fresh waters, I read it twice. Was there to be a movement against all of our play-pretties? The measure was junked but the thought of it shook me. Those guys were just getting too good on those walleyes up there. Somebody was trying to slow up the take and he was undoubtedly well-meaning. Whether or not he started with the right move is immaterial.

Then Missouri came forth with some tagging results that I had to read twice. There were some big impoundments up there where so many of the tagged bass were caught that it appeared the fishermen could clean the place out. Size limits went on with a bang. It looked as if sport fishing could completely upset the balance applecart.

I'm purposely sticking to generalities. The Missouri study involved a need for the size of fish that could use the shad that filled the reservoirs. Nope, a 7-inch bass couldn't get much nourishment from a 7-inch shad. He ended up with a competitor instead of a meal.

In recent years we begin to see that we may be overfishing many of our saltwater species as well. Saltwater bag and size limits have been questionable because saltwater fish are hard to count and hard to follow and we have the commercial fishing business which provides an essential source of food.

Now all of this is aside from, and in addition to, the matter of habitat. It is, of course, more important than ever but I'm not dealing with it now.

We are drawing closer and closer to the general concept of fishing for sport only and the release of fish once they are caught. This has been growing in freshwater trout fishing for years. There are thousands of expert freshwater trout fishermen who don't kill and eat a fish a season. The catch-and-release business is being applied more and more to black bass and to saltwater fish.

There is something special about the freshwater trout fishing because put-and-take programs have long been working there. Hatchery fish are stocked to be removed and eaten and, at the same time, "wild" trout aren't being kept by fishermen at all on many streams. It's easier to keep your thumb on a trout population than on a bass population but I think real bass management is coming.

Here we meet a dilemma. It takes lots of fishermen and lots of license, tackle and boat sales to finance fish management, whether in fresh or salt water. How many of today's fishermen are willing to fish for fun only without ever taking a fish home to eat? Just how much of sport fishing is the pure fun of pursuing fish and how much of it is show-and-tell?

Let's make a wild and semi-educated guess. I'll say that 90 percent of today's fishermen would lose interest if they couldn't take home a fish. Make all sport fishing a catch-and-release proposition and most fishermen would simply stay home or take up something else.

I would like to think that this is a simple matter of mental conditioning. I would like to think that the kind of people who will take long hikes and come home with no prize and the kind of people who will pay high prices for the privilege of hitting a golf ball with no concrete reward for their effort could learn to return all of the fish they catch. The tarpon and bonefishermen do it and I see no reason why the bass fishermen and the saltwater trout fishermen can't do it too. Almost all of the professionals in the sports fishing business are giving the concept lip service, whether they're actually practicing it or not. I believe that catch-and-release can be pounded into today's fishermen and that it will be automatic with tomorrow's fishermen.

Any sports fishing or hunting involves a deliberate handicap. It has been a long time since we decided that a punt gun was no good for the duck population and that dynamite was no sport for fishermen.

There are two routes when a supply suffers from overfishing. We can release what we catch or we can make them so difficult to catch that the population doesn't suffer. I think the release system is the final answer.

A man with a few thousand dollars tied up in a bass boat with all of the gadgets is not going to be happy about restrictions that would put him back to rowing along the shoreline. In many cases the major part of his sport is reading a fishfinder and using his deadly gear.

Anyway, we come to a bit of advice that will be painful at first.

Put them back.

THERE ARE SOME GOOD CAMERAS that fall between the really inexpensive models for backyard snapshots and the ones that serve professionals regularly. One class of them fits very well in a tackle box.

These are the "compact" 35 millimeter cameras. They take a full frame of 35 millimeter film and one of the smallest, the Rollei, is only 4 inches long. Some of the others are a mite bigger or a little smaller but not much. Most of them have built-in exposure meters. I wouldn't worry about the lens quality as we don't see many bad lenses any more.

Now the "pocket" cameras usually use only half of a 35 mm. frame. They're considerably smaller but I'd put up with just a little more size for the added advantage of a larger format. Of course there are uses for the smaller outfit where space is really at a premium, but don't get one for a saving in film costs.

These compact cameras can be kept in a plastic, watertight envelope while actually on a trip although I'd take them out for ventilation as soon as I got home. One model, the Leica, has interchangeable lenses but, fine as it is, it's a little out of the price range I'm pushing. Forget the interchangeable lenses and I think you'll get by for between $90 and $150.

Most of these cameras have slightly wide-angle lenses by old standards but the wide-angle lens has become so popular for general use that no one would object now if you called it "normal." Traditionally, the "normal" lens for a 35-mm. camera is 50 mm. Most of the compacts have lenses around 40 mm. Don't get all steamed up over lens lengths. The lenses are all right. All of them are fast enough for most outdoor photography.

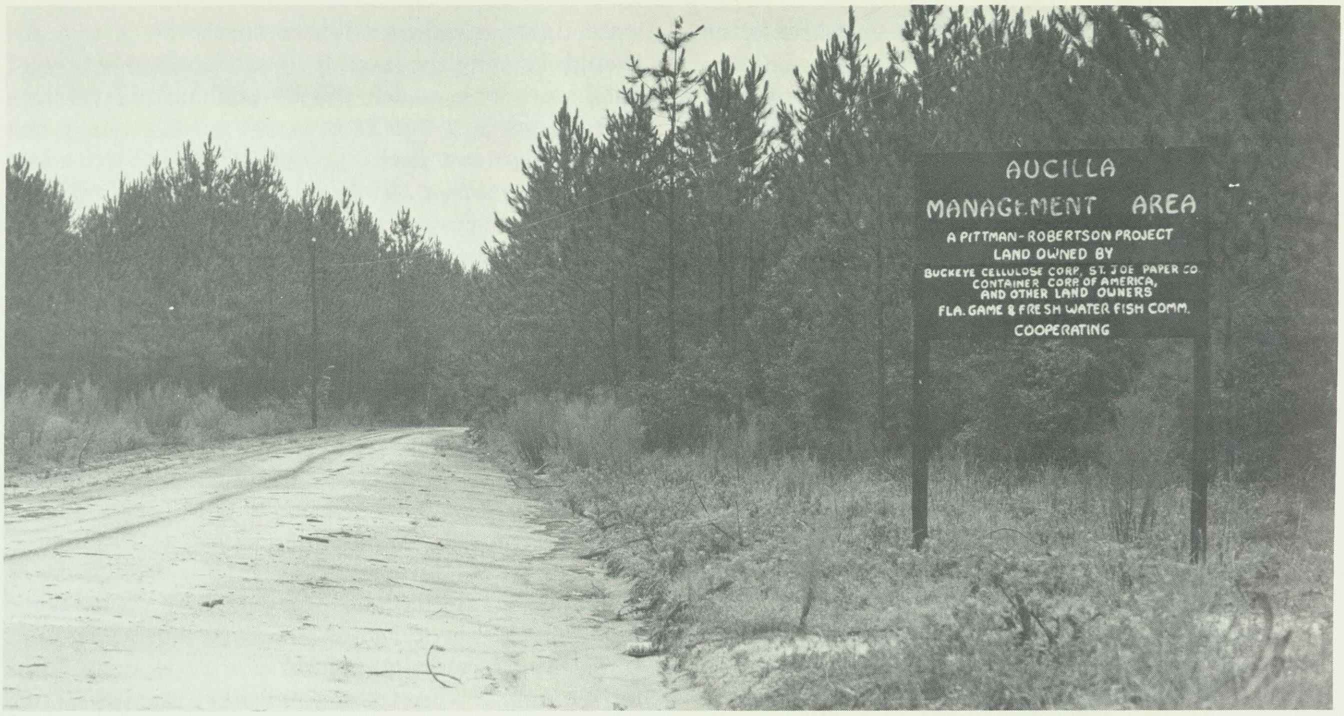
About the only disadvantage I can think of with these little cameras is that they're just a little awkward for big hands. Everything is pretty close together. If I were going to cover a riot, I'd like something I could grab hold of a little better, but for a handy picture taker you'll have along, you can sacrifice that kind of convenience.

It is hard to beat the Nikonos underwater camera for rough and tumble use on a fishing trip but it's considerably larger than the real compacts and has no exposure meter. It's also quite a bit more expensive but I still think it's a wonderful gadget and I use one quite a bit.

The more I talk to fishermen about personal cameras the more I am impressed by the necessity for compactness. If you don't take it along, you don't take the pictures. ●

Useful cameras for photo-inclined fisherman include the compact Rollei, center, flanked by a full-sized 35, left, and a Nikonos underwater camera, right. The latter is good for rough and tumble fishing trip use.

Photo by Charles Waterman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FLA. GAME & FRESH WATER FISH COMM.
COOPERATING

Photo by Laurence Rossignol

this north Florida hunting ground ranks high with the state's hunters

Aucilla Wildlife Management Area

OF THE 45 PUBLIC HUNT AREAS managed by the Florida Game and Fresh Water Fish Commission, the Aucilla Area would probably rank in the top 10 of a popularity contest in a statewide ballot. Encompassing approximately 102,000 acres, "Area 14" occupies space in Taylor, Jefferson, and Wakulla counties, and reaches from 5 miles west of Perry to 30 miles southeast of Tallahassee. With the exception of Tallahassee, there is no nearby densely populated area to account for Aucilla's popularity, yet each season autos displaying tags from south, central, and west Florida counties are much in evidence on the area.

The Aucilla's position of seniority in the Commission's wildlife management area system also adds to the area's status. It was established in 1953. Many Florida sportsmen were brought up hunting in the Aucilla Area.

Among the Aucilla's primary property owners are Buckeye Cellulose, Container Corporation of America, and St. Joe Paper Company. All three of these corporations are well known for their cooperation with the Commission in providing thousands of acres of outdoor recreational lands for public use.

The management area's southern boundary is the Gulf of Mexico, accounting for a large portion of the area consisting of salt marsh, tidal creeks, and low-lying hardwood hammocks. As the elevation increases, the terrain develops more toward well-drained pine and palmetto flatwoods, planted pine, cypress ponds, and, again, hardwood hammocks.

Most popular game species on the area are deer, wild hogs, and, though not open during the fall season, wild turkeys. The favorite hunting method is

Photo by Gene Smith

the traditional Southland-style dog hunting. Because of the degree of efficiency in hunting hogs with dogs, however, it become necessary, in 1973, to prohibit the use of dogs for taking hogs. Though the actual harvest of hogs has slightly declined since '73, efforts at sustaining a huntable feral hog population are greatly enhanced through this approach.

Over the years, turkey populations on the area have declined somewhat, as a result of heavy pressure combined with habitat changes, although the Aucilla WMA is still a good bet to produce a spring gobbler. Officers patrolling the area report a good turkey population, especially when compared to some other areas, but nothing to match the numbers of turkeys present in the early and mid-1960s, when flocks of 15 to 20 turkeys were commonplace on the Aucilla Area.

Game harvests for the past five general seasons and spring gobbler seasons indicate a good success ratio for hunters. An average of 175 deer, 299 wild hogs, and 15 turkeys were accounted for during the respective seasons. Although no harvest figures are available, small game fanciers also find excellent squirrel hunting.

There is an added attraction to the Aucilla Area in the form of a 900-acre impounded marsh called the Hickory Mound Waterfowl Impoundment Area.

Originally designed to attract and hold waterfowl in the area, the impoundment produces good duck hunting. The impoundment has provided an unexpected bonanza of outdoor recreation, however, in the form of excellent crabbing and fishing for both salt and freshwater species. A graded road on the dike forming the impoundment provides access to the area, and is routinely bustling with family outings on weekends and holidays.

To further emphasize the all-around capabilities of the Aucilla Area, mention must be made of the endangered species present on the area, the bird life, Indian artifacts, and approximately 33 miles of scenic rivers flowing through the area.

The Florida panther and southern bald eagle are

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Photo by Lovett Williams

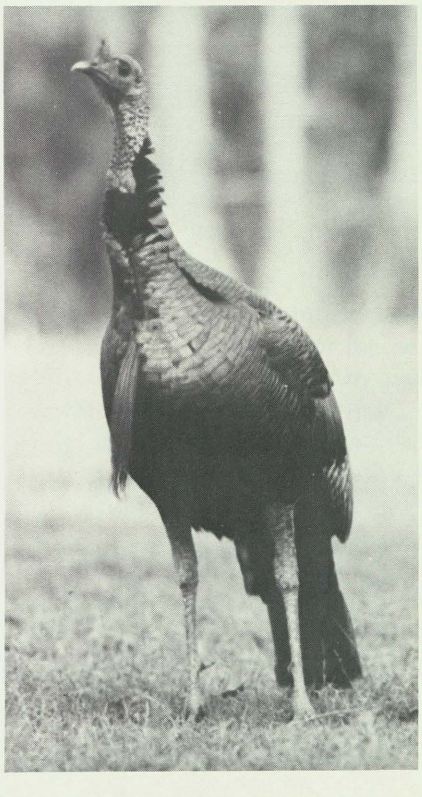

Photo by Laurence Rossignol

A stand of young pines crowds a section of the main grade penetrating the Aucilla. Freshwater marshlands, left, attract many species of birds. Although the turkey population is down from previous years, a hunter has a good chance of bagging a gobbler during the spring hunt. Hardwood hammocks, above right, offer prime squirrel hunting.

This is No. 24 in a series of articles on Florida Wildlife Management Areas. Maps and regulations on individual areas are available from regional offices and from the Florida Game and Fresh Water Fish Commission, 620 S. Meridian St., Tallahassee, FL 32304.

By LAURENCE ROSSIGNOL

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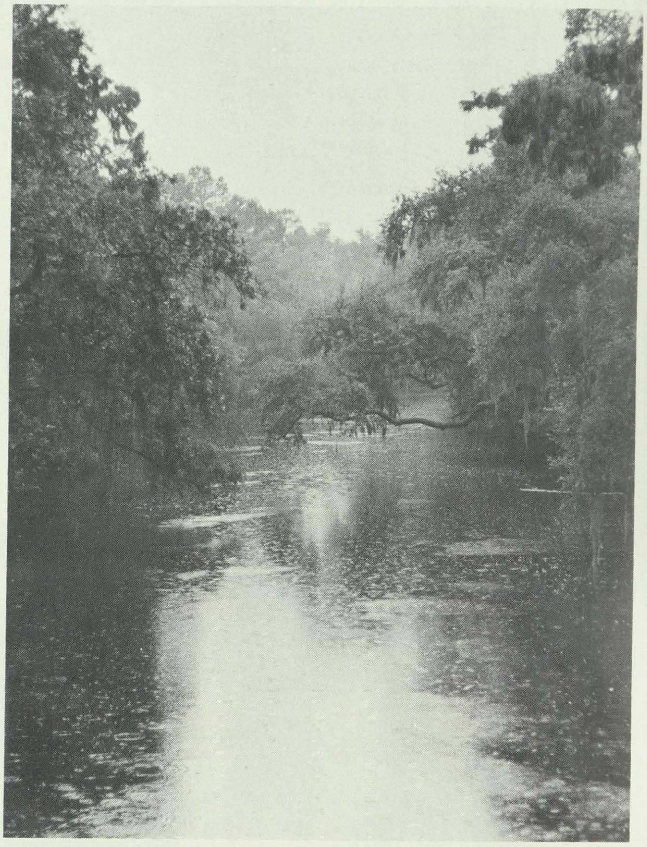
known to exist on the area, and although no endangered variety was sighted, this writer recently observed over 20 hawks in a recent 4-hour visit to the area. Numerous other varieties of bird life reside in the Aucilla Area. Wading birds are particularly plentiful in Hickory Mound Impoundment.

Although most of the Indian mounds in the area have been destroyed by amateurs, it's still fairly easy to locate arrow points along the many graded roads. A recently graded road after a hard rain produces best results.

The 33 miles of waterways are the Wacissa, Aucilla, and Econfina rivers. All three are navigable only by small boat or canoe, and all are very scenic. Excellent freshwater fishing, especially for panfish, is provided by all three. Crickets, bonnet worms, catalpa worms, and small artificial bugs all practically guarantee a string of redbreast and stumpknocker. A few small bass are also caught, but few people actually fish for bass. Bush hooks baited with cut mullet or eel produce some fine catfish.

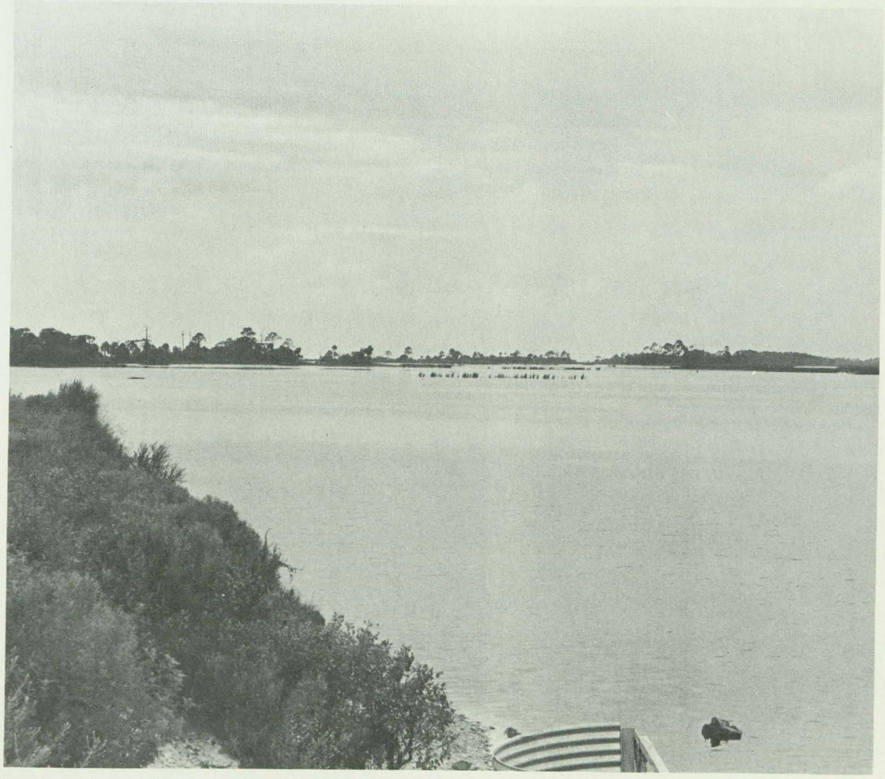
Like most wildlife management areas, the Aucilla has the standard food plots, wood duck nesting boxes, etc. Most of the wildlife management work on the area, however, consists of working with landowners in habitat manipulation.

It cannot be overemphasized that without the cooperation of large landowners, such as Buckeye, CCA, St. Joe, and others, there would be no wildlife management area program. The Game and Fresh Water Fish Commission urges all visitors to remember that they are guests, and to act accordingly by obeying all regulations and respecting the rights of the landowner. ●



Within the management area are some 33 miles of waterways, parts of the Wacissa, Aucilla, and Econfina rivers. The Hickory Mound impoundment attracts a variety of waterfowl.

Photos by Laurence Rossignol



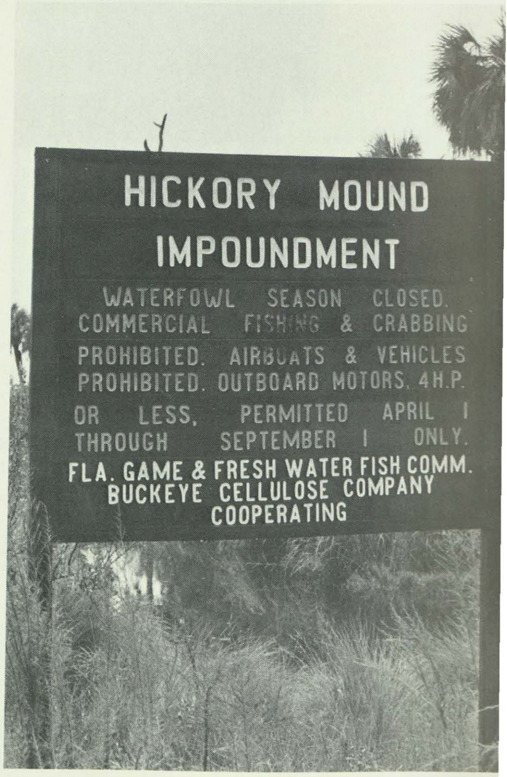

HICKORY MOUND
IMPOUNDMENT
WATERFOWL SEASON CLOSED.
COMMERCIAL FISHING & CRABBING
PROHIBITED. AIRBOATS & VEHICLES
PROHIBITED. OUTBOARD MOTORS, 4H.P.
OR LESS, PERMITTED APRIL 1
THROUGH SEPTEMBER 1 ONLY.
FLA. GAME & FRESH WATER FISH COMM.
BUCKEYE CELLULOSE COMPANY
COOPERATING

Photo by Zimmerman

Herding water hyacinths by airboat in mechanical cleanup of Lake Alice, Alachua County. The plants multiply at an astounding rate—a single hyacinth may produce as many as 65,000 others in one single growing season.

AQUATIC WEEDS

By TRISHA SPILLAN

NO ONE WOULD THINK OF TRYING to put together an aquarium without including plants. Aquatic plants are important to any well-balanced aquatic ecosystem, natural or artificial.

As on land, plants play a vital role in the water. They serve as cover areas for fish and other animals, and food sources for an endless variety of animals and birds. Plants also are important in the chemical make-up of the water, taking in carbon dioxide and giving off the ever-important oxygen.

But, just as a moderate number of most plants is desirable, too many plants can be very bad, as Florida is finding out.

Excessive growth of certain aquatic weeds destroys wildlife habitat; makes navigation difficult; clogs water drains, irrigation canals and agricultural spray equipment and pumps; lowers real estate values; interferes with swimming, fishing, boating and other recreational uses; causes undesirable odors and flavors; creates health hazards; and speeds up deterioration of the water system.

The multi-million dollar headache of aquatic weeds has become increasingly obvious over the past few years with many state, county and municipal agencies getting in on the fight to try and halt the spread of these weeds.

The story of these culprits and what is being done to try and turn back the tide is one in which all Floridians have a vital interest.

Florida is home to a wide variety of aquatic weeds, any of which, if left unchecked, can reach a problem level. Of these, three exotic species stand out as the most troublesome and the most costly to control—water hyacinth, hydrilla, and Eurasian watermilfoil.

Water hyacinth (*Eichornia crassipes*)

The attractive bluish-white and violet orchid-like flowers of the water hyacinth can deceive some people into thinking it's just another pretty plant. But with between 7 and 8 million dollars spent in 1975 alone on control efforts, its beauty is far overshadowed by its detrimental impact.

Water hyacinths are free-floating aquatic plants

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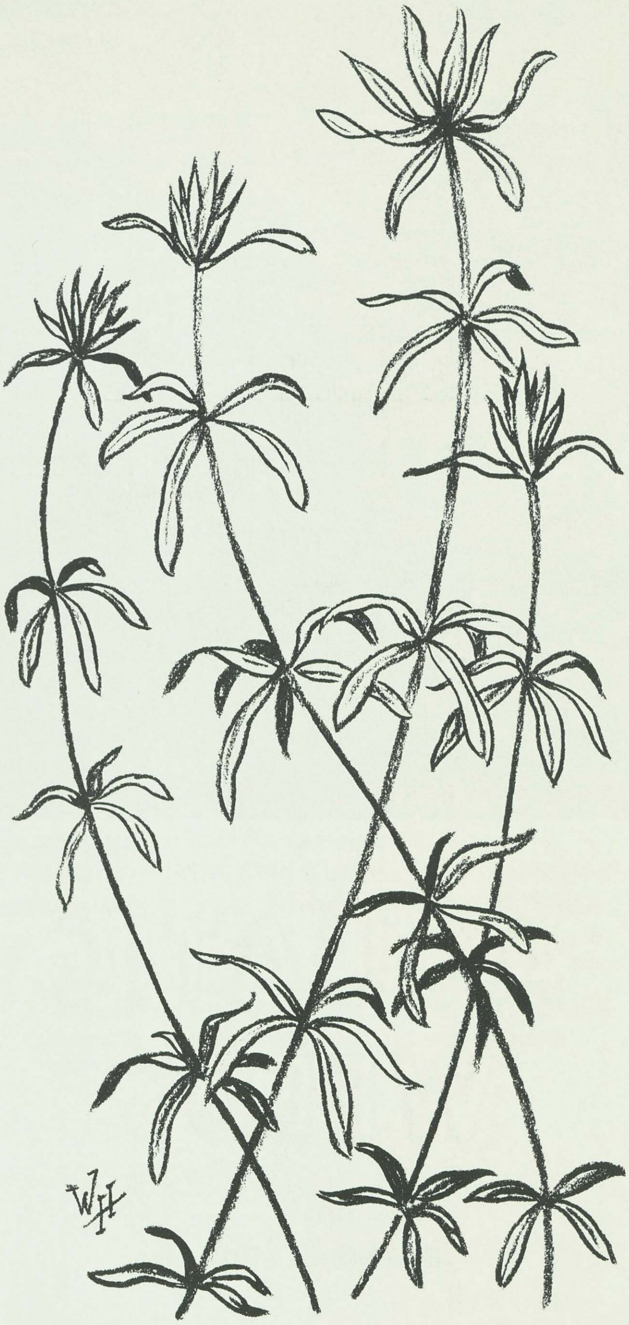

HYDRILLA

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found in a variety of aquatic habitats from tiny roadside puddles and quiet sloughs to large rivers and lakes. The plants have broad, shiny leaves, dark fibrous roots, and range up to nearly four feet in height. The seeds of the hyacinth sink to the bottom and can remain dormant for years. Once exposed to the drying effect of sun and wind—as during a drought or a reservoir drawdown, for example—the seeds become viable and ready to germinate as soon as they are again exposed to moisture. A single hyacinth plant is capable of producing up to 60 thousand new plants in a single year.

The floating qualities of this weed lend themselves to spread by Mother Nature. A strong wind can force a patch of hyacinths through connecting waterways, carrying the nucleus of an infestation into new waters.

The water hyacinth offers some benefit to wildlife. On occasion, it serves as a food source for wintering coots and as shelter for fish food organisms. It may also function as a trap for excess nutrients in over-enriched waters.

Hydrilla or Florida elodea (*Hydrilla verticillata*)

This non-native plant is not as showy as the water hyacinth but is fast becoming a major pest. First noted in the wild near Miami in 1960, it is estimated that the acreage covered by hydrilla is increasing at a rate of 15-20 per cent a year.

Hydrilla has long branching stems coming up from its roots. In bloom, a tiny translucent flower tips each stalk. The plant, resembling a bottle brush in form, is brittle and scratchy to the touch. Like the hyacinth, it can grow in big masses, blocking water flow and interfering with navigation. Reproduction is mainly by formation of offshoots or runners. The plant is readily spread by fragmented stems which send out roots, become anchored, and grow into thriving new plants.

Eurasian watermilfoil (*Myriophyllum spicatum*)

Like the other two, this exotic is believed to have been introduced into Florida waters by aquarium owners. A submerged plant, the watermilfoil produces leaves that resemble a frayed feathered fan. A spike of tiny flowers two to four inches long protrudes above the surface when the plant is in bloom. It spreads rapidly and is a serious threat to Florida's waterways.

How these and other exotic plants got into our waterways and how they spread are just part of the mystery concerning aquatic weeds.

The aquarium trade, indirectly, was responsible

Weed removal by hand-power

Art Runnels

for many of the introductions. Tanks of beautiful tropical fish swimming among exotic plants have increased in popularity, but when aquarium owners move or get tired of the hobby, the tank and its contents, fish and plants, frequently end up in a nearby lake or pond.

Fishermen, skiers, and boaters may unwittingly spread noxious weeds. Traveling from lake to lake, boaters often fail to remove aquatic plants attached to the boat, motor, or trailer. Through such thoughtlessness, aquatic hitchhikers may be introduced into previously weed-free waters. Both hydrilla and water hyacinths can regenerate from a single fragment.

Even wading birds and animals are culprits in noxious weed expansion—the result of their foraging and nesting activities during which plant sprigs may be carried and dropped in lakes and ponds.

The ideal conditions for plant growth offered by Florida's semi-tropical climate makes the state's waters a fertile field for a variety of noxious exotics.

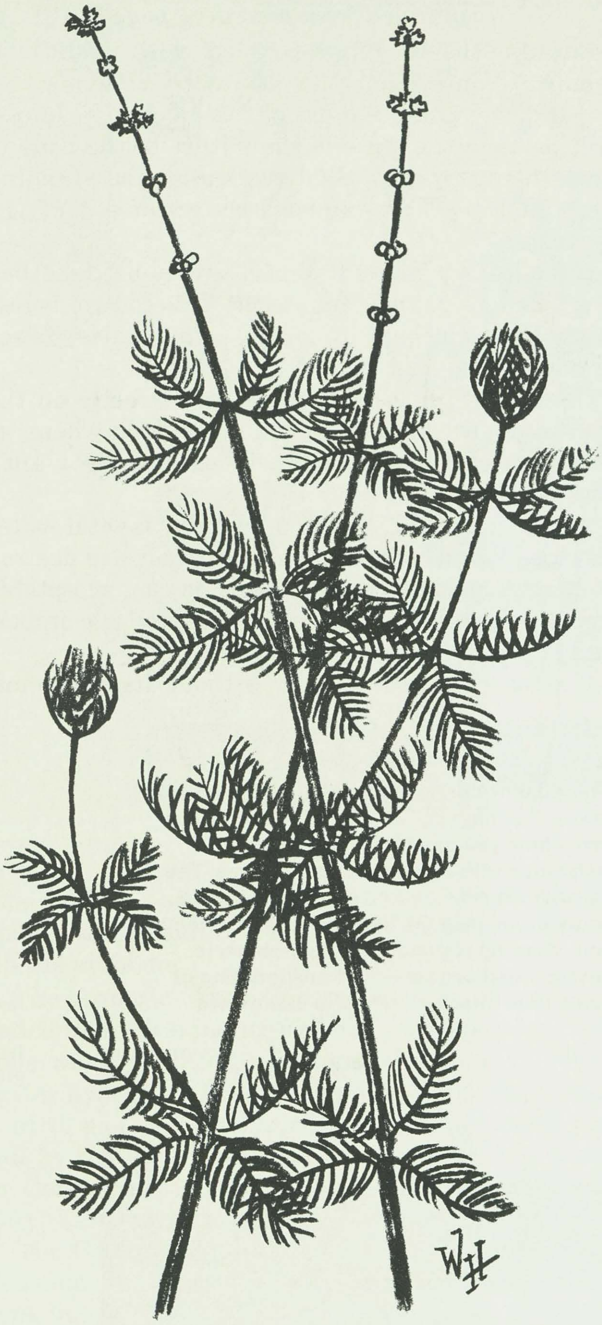
CONTROL

A simple, direct approach to clearing an area of aquatic weeds is to remove them by hand or machine. Over the years, several sophisticated machines have been developed for this purpose. Underwater mowers have been used with some success to cut aquatic weeds. Once clipped, the cuttings are gathered and removed.

Dragging a heavy chain through weed growth to uproot the plants is another technique that has been used in weed control efforts. The plants thus freed from their bottom attachment, float to the surface and are readily removed. A mechanical harvester has also been manufactured for use on shore or on the water. Cutting bars dislodge the vegetation which is then carried by way of conveyer belts to a collection point. When harvesters operate from the shore airboats are often used to herd the vegetation to the cutting blades. Mobile harvesters are sometimes advantageous since they can be readily moved to the site of weed infestations. There are disadvantages to the mechanical harvester, however, not the least of which is the characteristic they have of fragmenting such plants as hydrilla. This may easily compound the problem since the small plant bits are readily moved about by wind and currents, further seeding the waterway.

Underwater mower at work

Art Runnels



EURASIAN WATERMILFOIL

No matter what mechanical control is used, the expense in equipment, operation and maintenance is high, and the procedures must be performed on a

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continuing basis, often coupled with additional chemical control, for the job to be effective. An added disadvantage to use of the harvesters in certain parts of the state is the nature of the body of water being treated. Shallow depths and standing trees in the water hinder free movement of the harvester.

Chemical control is the most widely used method of attack against noxious weeds. This control is less costly than mechanical control and requires fewer personnel.

Chemicals can be sprayed either directly on the plant or on the bottom of the lake or pond where, as in the case of the hydrilla, it attacks the plant's lower base.

Another method seldom used today is total water treatment in which chemicals are added to destroy problem aquatics in bulk. This is not acceptable where waterflow and fishing pressure are important.

Use of chemicals is not without its problems, however. Some herbicides may also destroy useful vegetation as well as the target species, resulting in problems for waterfowl and fish populations for several months.

Decomposition of dead and dying plants in the hot summer months can reduce oxygen for aquatic life. Depending on water temperatures, depth and climate conditions, fish kills may be triggered. In addition, dead plant material settling on the bottom of lakes and ponds can reduce the habitat of insects which provide an important source of food for fish.

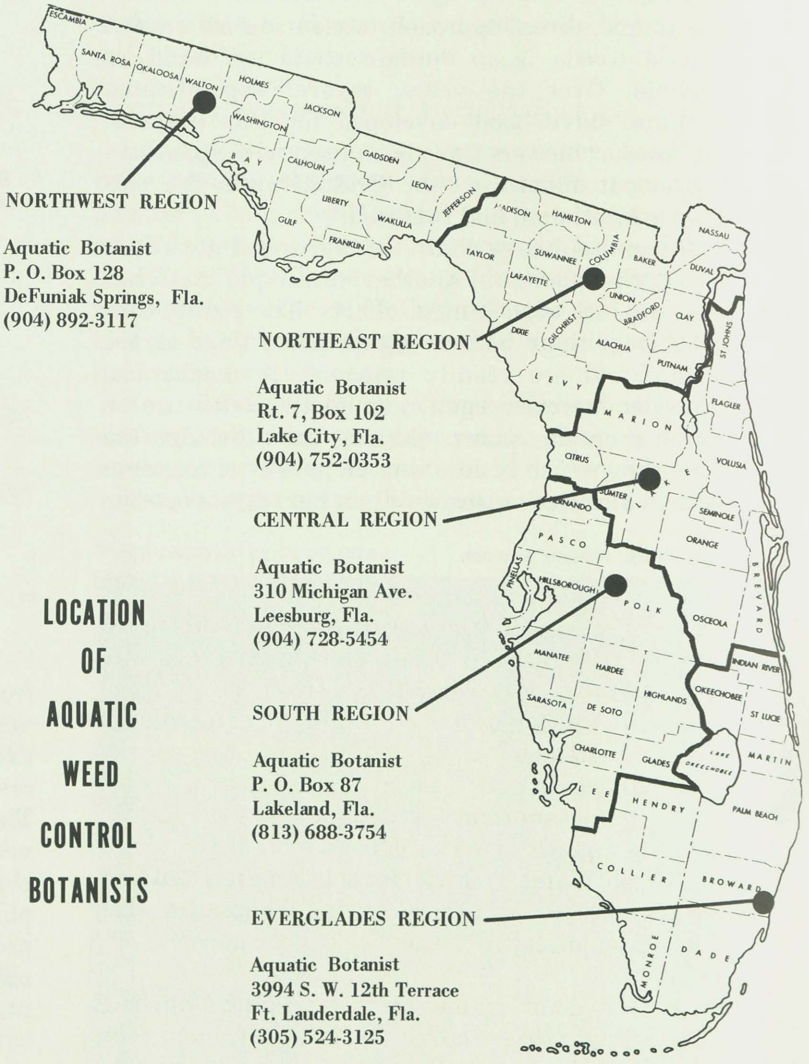
To minimize these effects, the Commission advocates a maintenance control approach. With an adequate number of field crews, properly trained and funded, noxious weeds could be treated before reaching the large scale problem stages.

Small scale control methods, prior to growing season, would help reduce environmental damage caused by chemical spraying operations during the summer months.

Using nature to control problems always has

Aerial spraying of chemicals is one way of combating water hyacinths and other aquatic weeds. The map shows offices of specialists from whom you can obtain advice or assistance with aquatic weed problems. The hyacinth weevil, pictured on opposite page, shows promise in the battle with the beautiful pest. Warning sign points up a problem in aquatic weed control—the transportation of plants from infested waters to clean ones.

Photo by Jim Floyd



NORTHWEST REGION

Aquatic Botanist
P. O. Box 128
DeFuniak Springs, Fla.
(904) 892-3117

NORTHEAST REGION

Aquatic Botanist
Rt. 7, Box 102
Lake City, Fla.
(904) 752-0353

CENTRAL REGION

Aquatic Botanist
310 Michigan Ave.
Leesburg, Fla.
(904) 728-5454

SOUTH REGION

Aquatic Botanist
P. O. Box 87
Lakeland, Fla.
(813) 688-3754

EVERGLADES REGION

Aquatic Botanist
3994 S. W. 12th Terrace
Ft. Lauderdale, Fla.
(305) 524-3125

LOCATION OF AQUATIC WEED CONTROL BOTANISTS

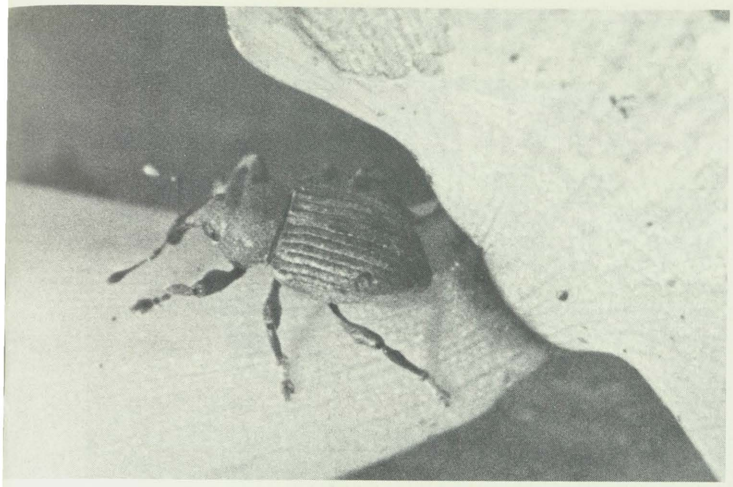


Photo by Wallace Hughes

WARNING
HELP PREVENT THE SPREAD OF WATER WEEDS
REMOVE ALL WEED FRAGMENTS FROM YOUR BOAT, MOTOR & TRAILER BEFORE LAUNCH OR LEAVING
THIS AREA
GAME AND FRESH WATER FISH
STATE OF FLORIDA

Photo by Jim Floyd

more appeal than manmade attempts. Studies are underway to determine what biological controls, whether insect, fish, bird, disease or animal, could be used to combat aquatic vegetation.

Biological control can be described simply as using organisms to feed on other organisms. The control relies chiefly on whether the organism will act as a tool to control only the target aquatic weed. If it is not selective or does the job too well, valuable aquatic vegetation essential to the survival of other aquatic life could be destroyed.

Some biological control methods have been researched in the state and more are under study. The alligatorweed flea beetle, for example, has been used with success. The tiny insect feeds exclusively on the stalks and leaves of the alligatorweed. Work is also being conducted jointly with several agencies on the water hyacinth weevil as a possible biological control.

For submerged vegetation, like hydrilla, a research program is underway to find a fish to help curb the exotic weed. The grass carp, or white amur, has been touted as a cure-all for the problems of hydrilla; however, research has not yet resolved the fish's final place in the aquatic weed battle.

Intensive research on any proposed biological control is essential before any introduction takes place. Without weighing all the facts, the intended biological control organism could itself become a problem instead of a remedy.

The control of aquatic weeds in Florida is shared among many agencies—state, county, and municipal. The aquatic weed control section of the Game and Fresh Water Fish Commission channels its activities primarily toward water hyacinths. The chief areas of concern are the state's major rivers and lakes.

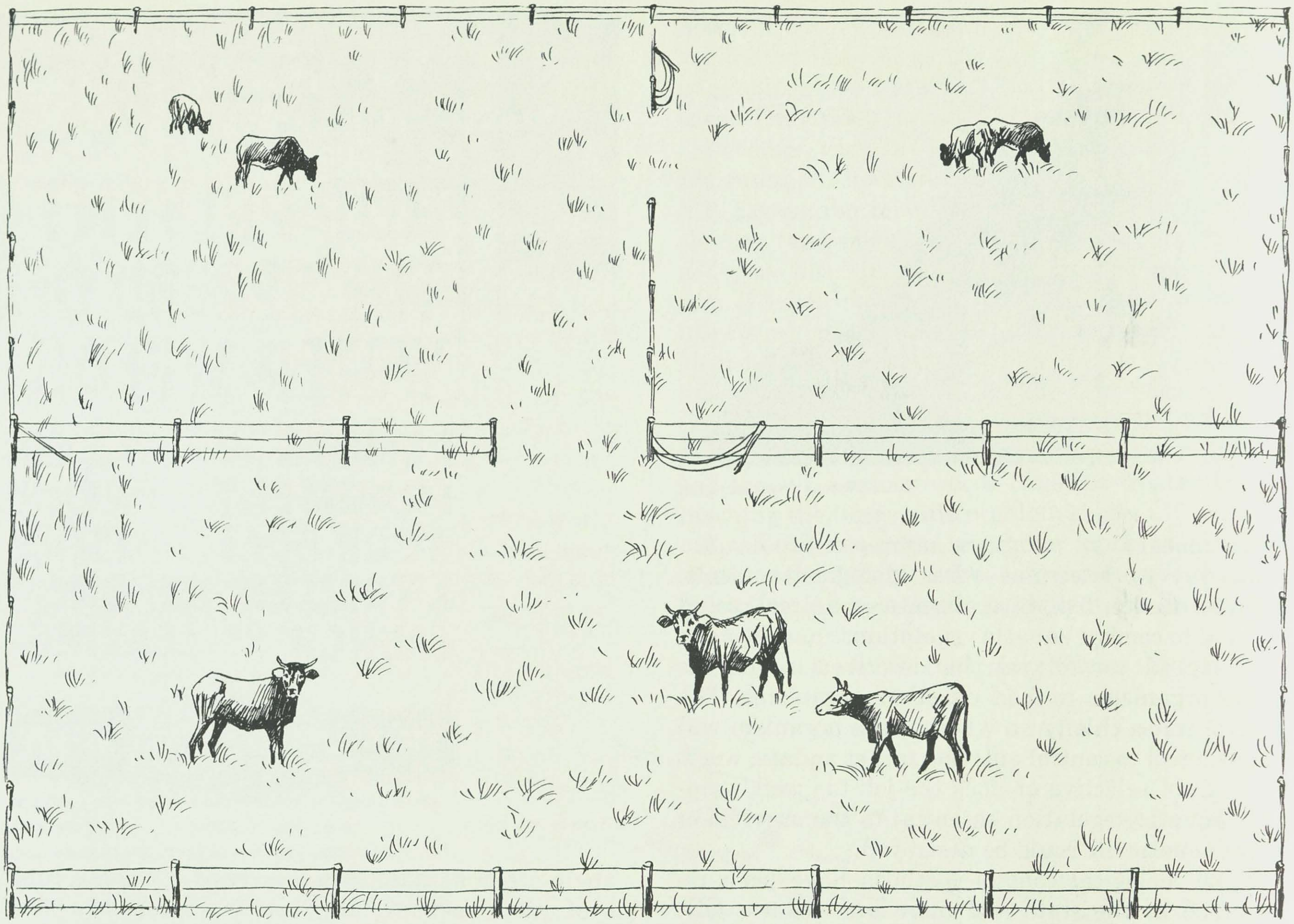
Water hyacinth jams, frequently resulting from water fluctuation and/or high winds, can completely choke navigable waters and threaten aquatic life. When large jams halt navigation in major channels, Commission control crews stop their other assignments and head for the trouble spot, often spending days and even weeks to clear up the problem.

The Aquatic Weed Control Section offers assistance to anyone inquiring about, or reporting, noxious weed conditions. Persons who want to report water hyacinth problems can obtain information on control methods or obtain a vegetation control permit by contacting any Commission aquatic botanist at Commission offices in De Funiak Springs, Lake City, Leesburg, Lakeland or Fort Lauderdale.

The Commission's Aquatic Weed Control Section does not limit its work to treating the current problem, but is involved in extensive research on how to prevent such problems in the future. A long range study of the effects of grass carp on native fish populations and its ability to control noxious aquatic vegetation is underway.

The Commission also maintains three biologists stationed at the Eustis Research Laboratory who are assigned to conduct research on chemical, biological and mechanical methods of noxious vegetation control and determine the effects of them on the environment.

Undoubtedly, aquatic vegetation control is one of the more complicated and misunderstood problems facing the State of Florida. Only through a better understanding of these plants, how they spread, how they may be controlled, and the role of citizens of the state in the fight, can the Commission hope to turn the tide in the battle over our waterways. ●



INTENSIVE GRAZING PROGRAM

ASK ANY NATIVE FLORIDA SPORTSMAN and he'll spin you tales of exciting hunting trips at favorite hot spots that today are just memorable flashbacks.

Hunting can still be a successful venture in Florida's backwoods, but more and more wildlife habitat suitable for quality hunting is rapidly disappearing.

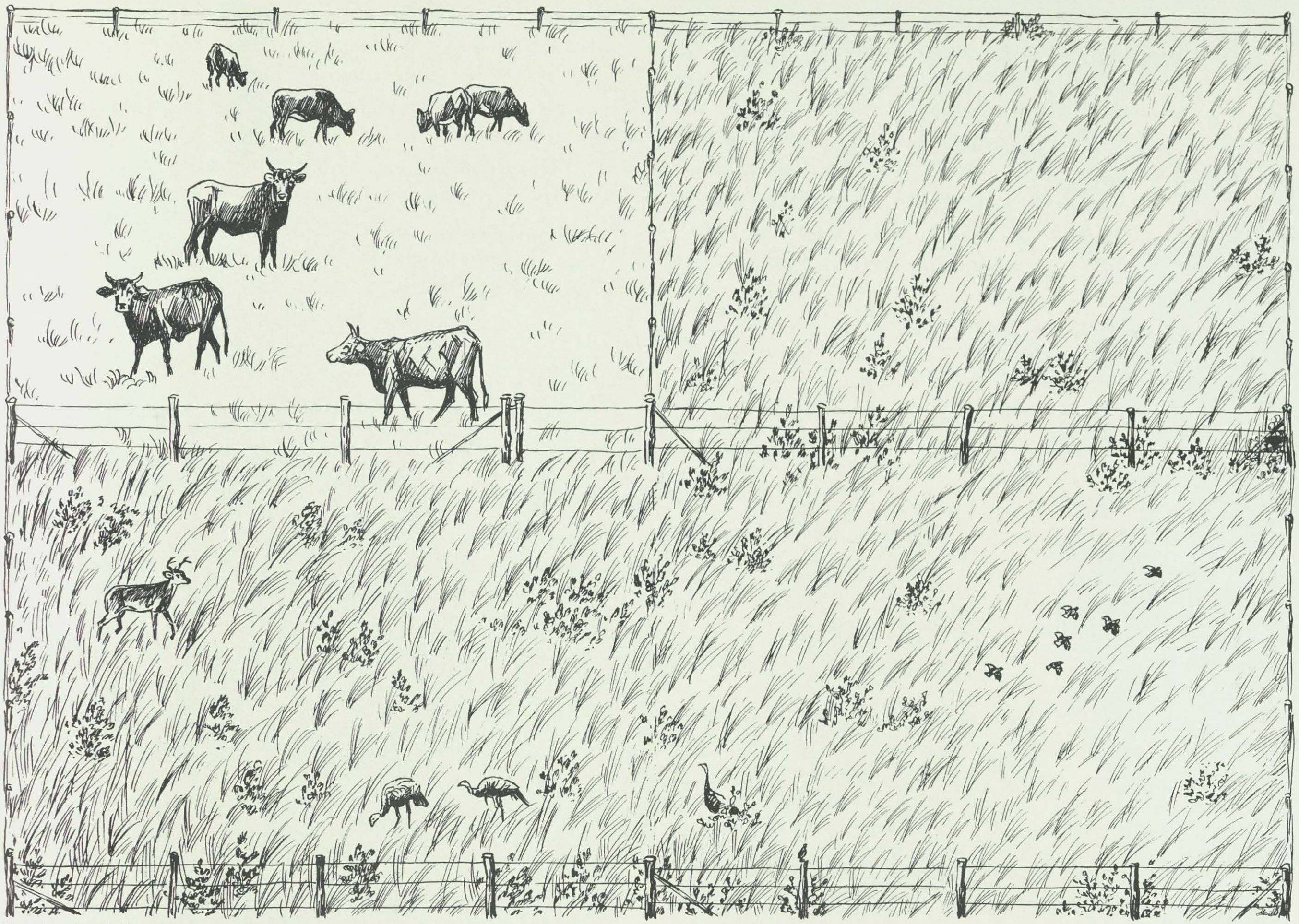
Wildlife habitat, home for many game and nongame animals, has succumbed to numerous uses and misuses. Residential development, in the form of condominiums and housing expansion, has taken a heavy toll. Industrial growth, too, has consumed thousands of acres of habitat for industrial sites and facilities. Habitat converted to improved pasture and crop lands by agricultural interests has changed the complexion for many wildlife species. As a result of environmental changes, one of the remaining wildlife strongholds is found on undeveloped wild lands, or *native range*, presently utilized on a large scale for cattle grazing.

Native range is best described as undeveloped lands containing natural forage plants consumed by wildlife and cattle. It is these lands that have caught the attention of the Game and Fresh Water Fish Commission's Wildlife Management Division.

The Commission has embarked on a study of range management concepts with various livestock and landowners. These concepts are not new to the livestock industry and cattle production, but for landowners seeking to promote wildlife forage growth on native range, additional range management procedures may be required.

To the cattle industry, range management means management of desirable grasses as quality food sources for cattle production. Throughout cattle raising history, range management concepts have evolved into a complex science.

Years ago large cattle herds along with native bison populations were free to graze on abundant grasslands. Roaming at will, these grazers found



Drawings by Wallace Hughes

Use of range management practices on "native range" is an important concept in improving quality forage for both cattle and wildlife. By rotating cattle from one range to another, according to plant growth cycles, native range could be managed for cattle production and hunting leases if so desired.

By GREG WILLIAMS

plenty of nutritional forage with grazing locations restricted only by geographical boundaries such as mountain ranges or rivers. As the country grew, open range was sold and divided into ranches and farms to accommodate agricultural needs. Endless grasslands were transformed into plotted acres, and natural boundaries were replaced by fences. It was evident that to continue quality cattle production on limited range, management of grasses was critical.

Today much cattle grazing land has been adapted to improved pasture. Having limited value for few wildlife species, improved pasture has been planted with selected grasses, many of them exotics, strictly for cattle consumption. To maintain grass production, sizable investments of time, money, and manpower are required. These costs are often prohibitive to livestock owners. To combat the problem, many cattlemen have returned to native range for grazing use.

Native range contains many forage plants suitable for both cattle and wildlife. If managed properly, cattlemen could increase forage production for cattle with possible benefits for wildlife. With a trend among livestock owners to supplement their income with hunting leases, the management of forage plants for wildlife utilization could complement a lease program.

Considering both wildlife and cattle uses, Commission wildlife biologists are researching range management concepts of cattle production, grazing methods, and forage plant growth.

For example, plants, like all other organisms, have growing seasons when production is best. Allowing rest periods for desirable plants during this season will aid production. At the same time, desirable grasses, managed properly, will out-compete and control less desirable plants. By shading out required sunlight, desirable grasses can severely restrict growth of unwanted vegetation. But when desirable grasses are grazed, controls must be present to prevent overgrazing. Simply closing fence gates is often the answer.

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According to range management research, grasses grazed below 50 per cent of the exposed plant are slow to respond during their subsequent growing season. If grasses are overgrazed, range deterioration can occur. Both wildlife and cattle are then left with low-quality, less-nutritional vegetation. Continued overgrazing practices will eventually result in overcompetition and invasion by poor-quality forage plants.

Guided by range management data, the Commission, in cooperation with the U.S. Soil Conservation Service and the University of Florida, is developing a grazing program on native range to investigate possible benefits for wildlife. The program considers many factors, such as acreage, herd size, native plant growth cycles, and boundary fencing. Incorporating this data, cattle herds would be rotated from range to range according to forage growth characteristics. Desirable forage for cattle and wildlife could be utilized effectively, and the risks of overgrazing and undesirable plant invasion minimized.

Coupled with the grazing program are plans for prescribed, or controlled, burning. This management tool, used on designated vegetation in specific locations, can stimulate growth of good forage plants and reduce the loss of desirable forage by indiscriminate burning practices.

The Commission has made plans to introduce the project on the Green Swamp and Cecil M. Webb wildlife management areas and on several private ranches. Monitoring the project, Commission wildlife biologists will collect data to determine success.

Employing native range management techniques, the Commission hopes to enhance suitable habitat for many wildlife species. To the sportsman, good quality habitat is the key to memorable hunting experiences. ●

Photos by Wallace Hughes

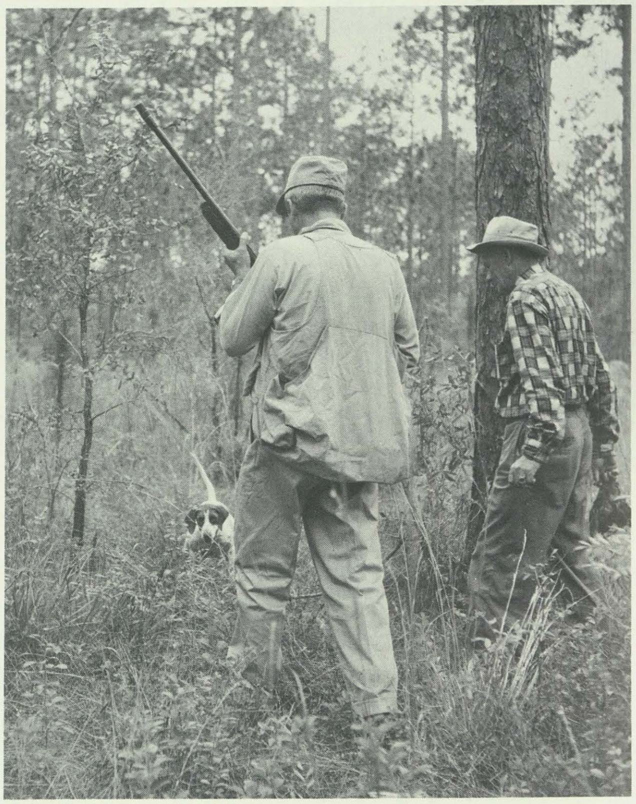
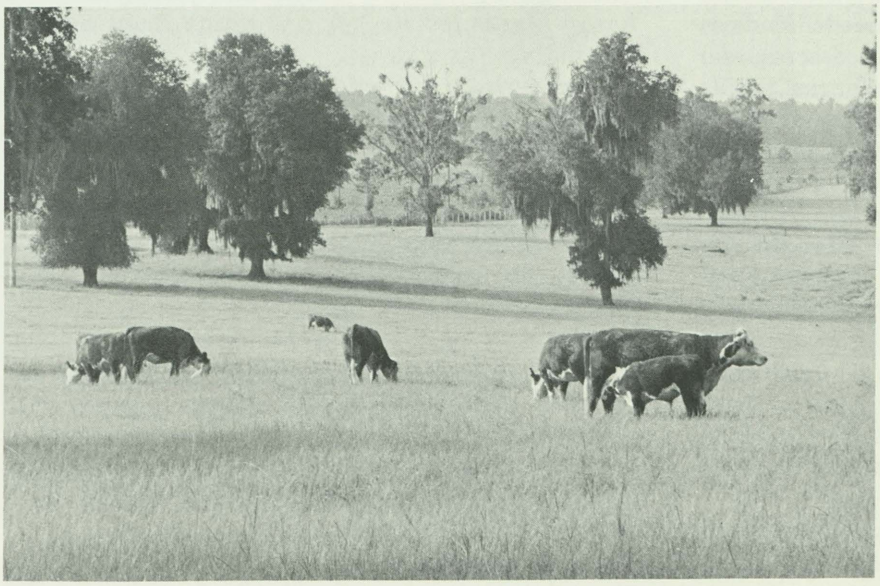


Photo by Wayne Hook



The improved pasture (left) has limited value as wildlife habitat, especially for game species. Proper management of grazing lands can assure benefits to both domestic stock and wildlife.

Photo by William A. Greer

heads you lose, tails they win, in the Apalachicola River game

THE BIG GAMBLE

By J. MICHAEL MILLER

AN OLD SYCAMORE, ITS ROOTS LAID BARE by racing water, succumbs to a summer thunderstorm's gusts and topples down the steep bank of the Apalachicola River. The tree's crown scarcely settles into the water before minnows are among the leaves, feeding on aphids and caterpillars and finding shelter among the submerged foliage. With time, the leaves are swept away, and the tree which once raised its milk-colored limbs 90 feet above the river hangs lifeless in the current—a snag.

In life, the sycamore was a productive component of the forest; in death, it has become even more productive within the aquatic environment of the river. The branches which once offered continuity to the forest canopy now offer diversity to the river channel. As the current gurgles through the branches, the water is aerated and mixed. Pockets of quiet water form behind the trunk and branches, allowing algae and other small aquatic organisms such as mayfly nymphs to find attachment and refuge from the current. Juvenile fish are attracted to the snag, finding not only shelter but an abundant source of food. Turtles sun along the trunk, dropping back into the safety of the river at the first sign of danger, while a heron leans from a low branch to spear topminnows.

The heron is put to flight by the whine of an outboard motor, and moments later a fisherman angles his skiff into the snag's eddy and loops a rope around the branch on which his feathered counterpart was perched. Chances are that he's

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The town of Apalachicola is a major seafood landing and distribution point. This highly valuable industry centers on productivity of Apalachicola Bay, threatened by the Corps' river plan, backed by a handful of promoters who show quite a bit of strong self-interest.

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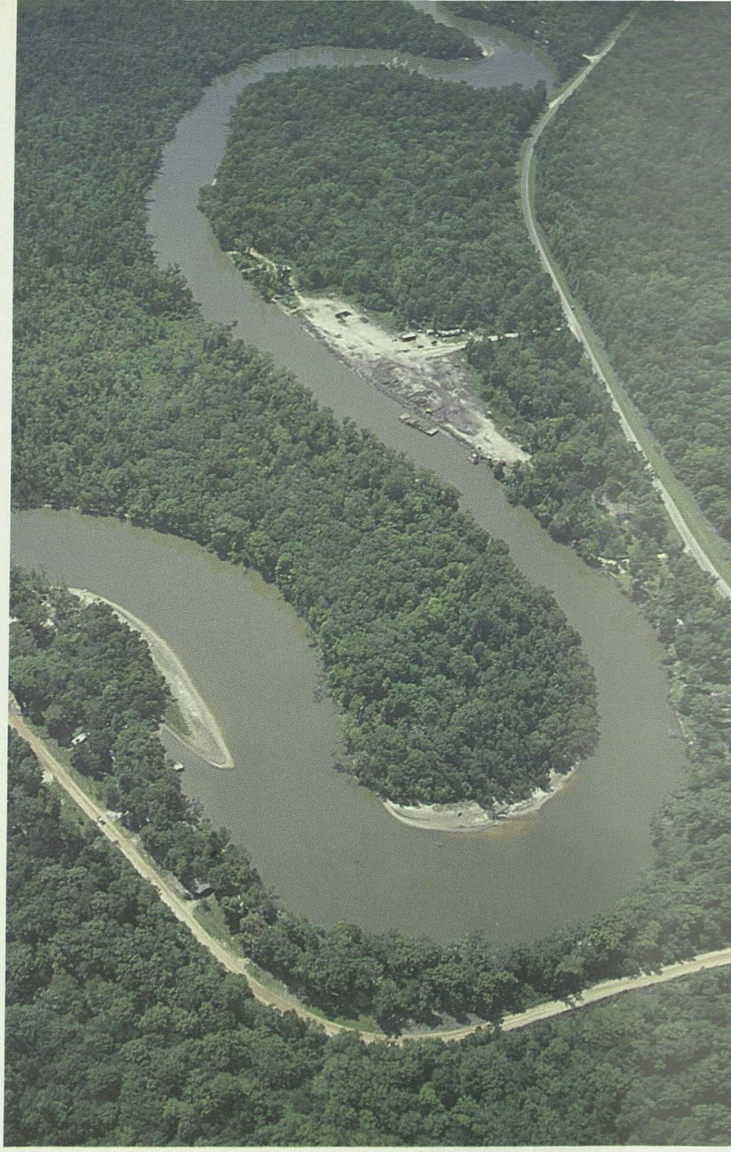
fished the river's muddy water for years and knows the snag as a natural fish attractor. Armed with cane pole and crickets, he expects to catch a stringer of bream before nightfall.

In a stream less turbid than the Apalachicola, submerged plants flourish, providing food, cover, and dissolved oxygen for aquatic animals. The Apalachicola, muddy with Georgia topsoil, is too silt-laden to allow light to penetrate for any appreciable depth. The strong current and lack of light prevent submerged plants from gaining roothold, eliminating a valuable element of the ecological system.

While the scouring current prevents the establishment of aquatic plants, it also provides an ample supply of snags, through steady erosion of the banks. In the absence of aquatic plants, the role and importance of snags takes on new dimension and vitality, in some ways filling the niche left vacant by submerged vegetation. Without them, the biological potential of the low-water channel would be greatly diminished.

Extending outward from the main river channel, sometimes as much as several miles, is the forested swamp of the flood plain. Oak, hickory, tupelo, and haw feed the abundant wildlife found there. During high water, when the flood plain actually becomes part of the river channel, this rich food source is made available to fish and other aquatic animals. As the river rises, the entire flood plain forest begins to function much like the river snag. While deer, bear, and turkey seek higher ground, bass



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and bream move into the submerged underbrush, feeding heavily on insects and other invertebrates.

Along its 107-mile length, from Jim Woodruff Dam at the Georgia line to its mouth at Apalachicola Bay, the Apalachicola River undergoes subtle, but considerable, changes in character. The upper reaches of the stream are characterized by steep banks, occasional limestone outcrops, and towering bluffs along the eastern shore. The forests are composed of typical Florida flood plain species, such as cypress, river birch, and overcup oak, with a sprinkling of Appalachian species washed from the mountains of Georgia. Here, too, can be found several endemic species of plants and animals such as *Torreya*, Florida yew, shoal bass, and Barbour's map turtle. These species, found nowhere else outside this drainage area, find the particular set of ecological conditions offered by the upper river to be essential to their survival.

In the vicinity of Blountstown, the river broadens and becomes more typical of coastal streams. *Torreya* and Florida yew are left behind in the deep ravines of Gadsden and Liberty counties, as are the animals which depend on rocky river bottom for feeding and breeding habitat. Tupelo becomes a dominant flood plain species, its flowers providing the fine, light honey sought after by beekeeper and black bear alike. Nearer the bay, tidal influence becomes evident in the appearance of cabbage palm-studded coastal hammocks and broad sawgrass savannahs.

Throughout the length of the river, however, the flood plain vegetation types share a common trait: that of being able to withstand prolonged flooding. As surely as winter and spring rains come to the mountains of Georgia and Florida's panhandle, the river will swell and flood each year. Plants, animals, and any people who choose to live within the flood plain learn to adapt to these seasonal inundations.

During periods of high rainfall, when the river broadens its reach to cover the forest floor, the term "flood plain" takes on real meaning. These are the times of replenishment for the flood plain forest. Slowed by its passage through the trees, the current deposits its silt load, heavily laden with minerals and organic nutrients, creating a net effect much like that of a farmer fertilizing his field.

If the river is likened to a farmer, it must also be considered as a trader; as an importer and exporter. The same process which brings necessary minerals to the forest also carries away excess nutrients in the form of leaf litter and other organic detritus.

Emptying into the bay, the silt and detritus-laden river water bathes the estuary in a rich mixture of minerals and nutrients, creating one of the richest remaining seafood resources in the country. The commercial oyster landing of Apalachicola Bay

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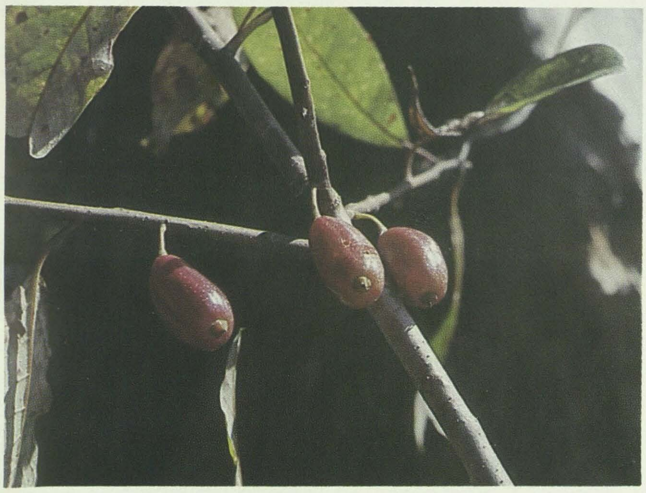

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Photos by William A. Greer

1. Steady bank erosion results in abundance of snags which are of major importance to the stream's fish. 2. A flood plain forest. 3. A meandering course, plus wide, heavily timbered flood plain are features of the big river. 4. Fruit of the tupelo, one of the major species on river. 5. Limerock shoals are ecologically important feature of portions of Apalachicola.

Photos by William A. Greer

(continued from preceding page)

comprises 87 per cent of the state's total catch, while fish, crabs, and shrimp taken from the bay also rank as important commodities.

The bay can be thought of as a hybrid, the result of the mixing of the river and the sea. As with any successful cross, the result is apt to go beyond the mere preservation of some of the characteristics of each parent. Instead, it becomes, synergistically, more useful and more productive than those from which it sprang. As a result, a better oyster factory could hardly be designed and could never be executed. With a ring of barrier islands separating the bay from the open Gulf of Mexico, coupled with the profound effect of the river, the bay provides near-optimum conditions for the production of oysters. The seasonal flux of the river also helps to flush the bay, maintaining the good water quality essential to the production of a commercial harvest of shellfish.

The town of Apalachicola, lying at the mouth of the river, makes its living from the bay. Oystermen, shrimpers, crabbers—fishermen of all sorts—live in and around Apalachicola, selling their catch to local packing houses. It has been estimated that more than 60 per cent of the economic base of Franklin County centers around the seafood industry. Yet, despite the river's acknowledged value as economic and recreational resource, pressures are

being brought to bear to drastically change its character.

Traditionally, the river has been a conduit over which man has transported his goods and himself. Indians traveled its watery road on their way to the bay and its easily-obtained sources of protein. The red men were replaced by Crackers, who rode great rafts of hardwood logs cut from the flood plain forest and hauled to the water's edge by oxen. But it wasn't until steamboat whistles were heard on the river that dependable two-way traffic was established.

The early vessels were shallow-draft paddle wheelers; true riverboats adaptable to almost any mood of the river. Post-World War II industrialization and the New South created a demand for deep-draft vessels which could haul more goods at a cheaper rate. In the face of this demand, a complex navigation enhancement project was planned for the Apalachicola and its major tributaries, the Chattahoochee and Flint rivers, by the U.S. Army Corps of Engineers.

The Chattahoochee and Flint rivers were subsequently laced with a series of dams that provided hydroelectric power and deep, stable navigation channels. Man's ability as an earth mover had increased to the point where it was no longer necessary to design a riverboat capable of navigating a shallow, crooked stretch of water. Instead, the river was redesigned to meet the requirements of the boat.

Changing the characteristics of the stream has caused profound changes within the river system. Striped bass, sturgeon, and other anadromous fish found their range reduced to a fraction of that which existed prior to the damming of the rivers. Moving upstream from the Gulf to spawn, they find their way blocked at Jim Woodruff Dam, the lowermost in the system. As a result, the numbers of striped bass have decreased to the point where the game and fish commissions of Florida and Georgia conduct restocking programs, and a small, but once-thriving, commercial sturgeon fishery no longer exists.

Other channel improvement activities also tax the resources of the stream fishery. Rocky shoals, the feeding and spawning zones for shoal bass, are also low-water obstacles to deep-draft barges and are being steadily removed. Snags, basic habitat of the low-water river, are "navigational hazards" in the vernacular of the Corps of Engineers, who claim to remove approximately 10,000 each year from the Apalachicola. And the river mainstream itself—sculptor, farmer, trader, provider that it is—also is a wanderer, causing consternation among those who would navigate it. This, too, is a solvable problem in the mind of the Corps. Entrainment dikes, fences of pilings and stone rubble built at right angles to the current, help to curb a more direct route to the Gulf. In places, entire oxbows have been bypassed by neatly engineered cutoffs which allow for easier passage.

In an average year, the Corps spends more than $1 million and dredges approximately a million cubic yards of Apalachicola River bottom in an effort to maintain the authorized 100-feet-wide by 9-feet-deep channel. In high water years, such as 1975, the project is a smashing success, allowing unlimited year-round barge movement. In other years, whenever prolonged dry weather lowers the river level, deep-draft barge movement on the river is restricted despite the efforts of the Corps. Shippers are then advised to "light load" their vessels to 8 or even 7 feet, to avoid damage to the hulls of their barges.

In 1973, the Corps proposed to solve this problem by building a series of four dams on the Apalachicola. In an emotion-charged hearing at Marianna, the Governor and Cabinet opposed the plan as an unjustifiable risk to Florida's natural resources. Joining the opposition to the project were various state and Federal agencies concerned with biological resources, as well as the elected bodies representing the six Florida counties bordering the river. The issue, seemingly, was dead.

While environmentalists celebrated their victory, however, Alabama and Georgia industrialists were already planning a counterattack. A Dothan, Alabama-based group, the Tri-Rivers Waterway Development Association, began an intense public relations campaign designed to rally support for one or more dams along the Apalachicola. Gaining impetus from a rocky economy, they claim that new industry will be attracted to the region by the building of dams.

Their opponents point out that the authorized 9-foot channel has been available for more than 80 per cent of the time since 1970, and that only 10 per cent of the vessels using the Apalachicola require depths of greater than 7 feet. According to Corps records, 7-foot depths are sufficient to float 90 per cent of the vessels logged as using the river system, and have been available 100 per cent of the time since 1970.

Despite the availability of a shipping channel, an average of only three barge tows per day travel the river, and new industry has shown little inclination to locate along the Apalachicola. Of the three or four industrial sites located along the river, all are at least several years old.

Seemingly, Floridians have the least to gain and the most to lose if dams are built along the

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Snags provide a basic habitat feature of the river. Sadly, they are also deemed navigational hazards and are removed by a Corps-operated snag boat, top left. In an average year, more than 1 million dollars are spent in an effort to maintain a 100-ft. wide, 9-ft. deep, channel, for the light barge traffic using the Apalach.

The well-being of the seafood industry of Apalachicola Bay and adjacent waters depends on the quality of water coming down the river. The proposed navigational development would possibly destroy the delicate ecological balance that makes the area an important producer of oysters, right, and shrimp, pictured below.

Photos by William A. Greer

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Apalachicola. Already, we have a seafood industry as well as a small commercial freshwater fishery, both of which are dependent on the river. In fact, the shellfish industry will be lost or rendered unusable if even the water quality of the river is lowered. The recreational resource of the river and its flood plain is of significance and is growing, as are other uses, such as timber production, and these, too, would be affected by changes in the river's ecological system. And, we already have a river channel that is available to commercial navigation at authorized depths for the majority of the time.

The decision of the Governor and Cabinet to oppose the dam proposal in 1973 was based on the opinions of biologists who are knowledgeable of the Apalachicola system. Although concrete proof is rarely available until after the fact, indications are that the proposed project will have a significant adverse effect on the river. As new information has come to light, it has been shown that even the current navigation enhancement program of dredging and desnagging significantly degrades the river as a fishery resource.

Florida is at the lower end of the tube. Whatever Georgia or Alabama choose to flush, we are forced to receive. At present, we have a natural sewage treatment plant, the river flood plain, which purifies the water to acceptable standards before it reaches the shellfish beds in the bay, *at no cost to the taxpayer*. Already, we have a system which provides a livelihood for thousands of people and a protein source for additional thousands, and, again, it doesn't cost us one dime.

The question facing Floridians is whether the possible loss of this system is worth the gamble; whether the degradation of one of the largest intact wilderness areas remaining east of the Mississippi, or the possible contamination of the largest harvestable shellfish grounds left in the U.S., are worth the risk in the face of tentative gain. Or whether we, as taxpayers, and the recipients of the assets or liabilities of the lower end of the river system, are losing out to a bureaucratic boondoggle and a few upriver special interests. ●

Summing It Up

our long-time guns and hunting department editor rings down the curtain with a rundown on some especially favored gear for outdoorsmen

By **EDMUND McLAURIN**

FOR ALMOST 23 YEARS—for 272 consecutive issues of *Florida Wildlife*, to be exact—I have had a monthly column on guns and hunting in this magazine. Now I am saying "So long!"

Over the years, my FW texts have always been written with reader benefit in mind. I don't recall ever having written a text that did not contain some form of helpful information. Appreciative letters over the years from readers benefiting from shared technical information and hunting tips have been tangible evidence of achievement of that editorial objective.

There were many occasions when it would have been much easier to have merely written entertainingly readable material, without caring much about ultimate value to individual reader. I've read such texts—and likely you have, too—where completion did not add much to personal knowledge or stimulate initiative. Such published texts may offer attractive illustrations and may hold momentary reading interest, but in the aggregate make little knowledge contribution and lasting impact. I am glad to be able to look back and honestly feel that my published material has never been in that category.

Neither have I had to resort to dressed-up illustrations to support a weak text, as I find in so many magazine articles today. Always my texts have been able to stand on their own, whether or not the magazine editor elected to further dramatize them with professionally well-composed illustrations and captions, as he frequently did.

In the early years of this column, reader mail largely went to the editorial offices in Tallahassee, but as answered mail and personal contacts made my St. Petersburg home address well known, letters came directly to me in increasing volume. Many readers have been regular correspondents for 10 years or more. Two date as far back as 1955.

Readers also have long memories. Scarcely a month goes by that I don't get a letter or phone call mentioning a long-ago-published article, with a request for a possibly still-existing copy, or for needed specific technical information on the subject the published article represented.

I wish to thank readers for their loyalty and their appreciation of my work.

There have been a few occasions when errors have managed to slip into published texts—by proper (often highly technical) name misspelling in setting a text in type, by editing of my text length to meet printed page space, and thereby disastrous deletion of a critical sentence or paragraph—or outright error on my part, despite exercised care. Every writer and editor knows such sad days.

I feel that it is fitting to roll down the curtain on my column writing by identifying and sharing with readers descriptions of items of sporting equipment that have given me so much pleasure and service—that you, too, may have such on acquisition. There is no commercial representation in-

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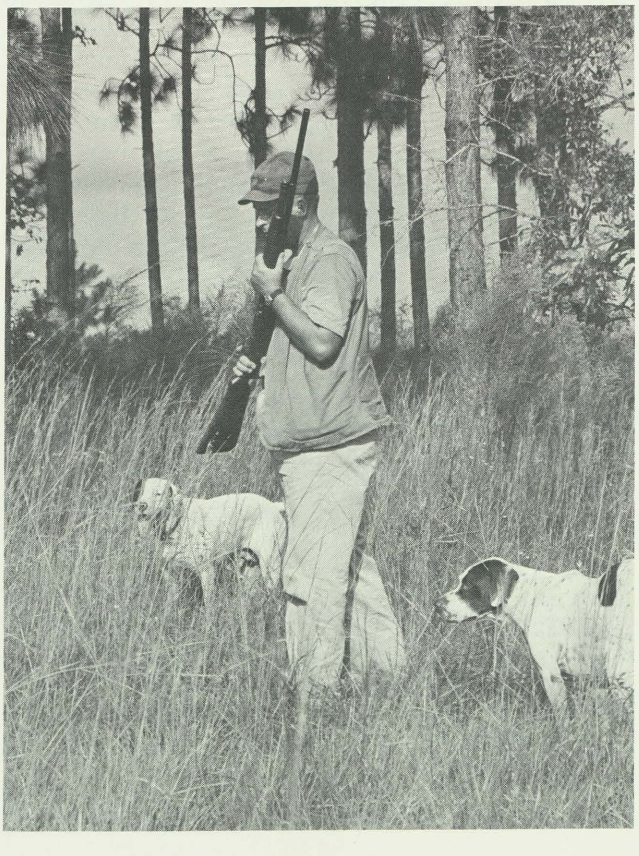
Photo by Wallace Hughes



The dogs find a final covey as the end of the hunting day approaches. Similarly, Ed McLaurin, after 23 years of writing this column, offers a few final pointers of his own pertaining to gear for outdoorsmen.

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volved. I simply mention and describe certain things that have been both valuable and pleasurable to me in my own hunting and fun shooting, and that I believe will help you in yours.

Match Your Gun Actions: So far as possible, match your shotgun, big rifle, and .22 small game and fun rifle so that, in functional operation, they are of basic mechanical action. Shooting one will tend to make you more proficient with the others.

Good Shotgun: Get yourself a good shotgun, if you do not already have one. A shotgun, especially one of 12 gauge, is the most versatile hunting gun you can own.

Among modern models, you can't go wrong choosing a hunting shotgun from among the Remington 870 "Wingmaster" pump action repeater, or the similiar-type Ithaca Model 37 or Savage-Stevens Model 30-D, preferably with ventilated rib and muzzle-attached selective choke features.

If you are shotgun recoil conscious, or have a heart condition, then I recommend a Remington Model 1100 gas-piston autoloader.

Be sure to pattern your shotgun, so that you will know exactly where it places the main shot charge in relation to point of aim, and which particular shot size patterns most uniformly with the choke boring used.

Big Game Rifle: I consider the Remington Model 700 in BDL grade one of the finest bolt action big game rifles to be had. In proper caliber, you can use it effectively anywhere in the world.

For Florida brush country big game hunting, I especially like the Marlin Model 336-C lever action Carbine in .35 Remington caliber. Some of the current-production Marlin 336's come to hand a bit rough on their interior surfaces, but partial disassembly and judicious application of a smoothing stone or abrasive polishing tip, chucked in handheld Dremel electric tool, will give custom smoothness.

Keep in mind that a short overall length rifle can be carried more quietly in thick brush, and be swung faster when put to shoulder, than a long one.

Gun Cleaning Rods: A flimsy or rough-surface cleaning rod can do more harm than good to a firearm. Don't compromise on cleaning rod quality.

I use Outers Laboratories' "Imperial" lifetime grade, swiveling handle, polished stainless steel rifle and pistol rods, and their anodized aluminum shotgun rod.

Get the rifle and pistol model in particular calibers used, and shotgun rod in correct gauge size.

Tools: Whether guns are your sole hobby or among others, treat yourself to an industrial grade Dremel No. 281 Moto-Tool Kit. It will prove one of the most versatile tools you can own. Small gunsmithing job and hobby uses are virtually limitless. You have to own and use a Dremel No. 281 Moto-Tool Kit to fully appreciate it.

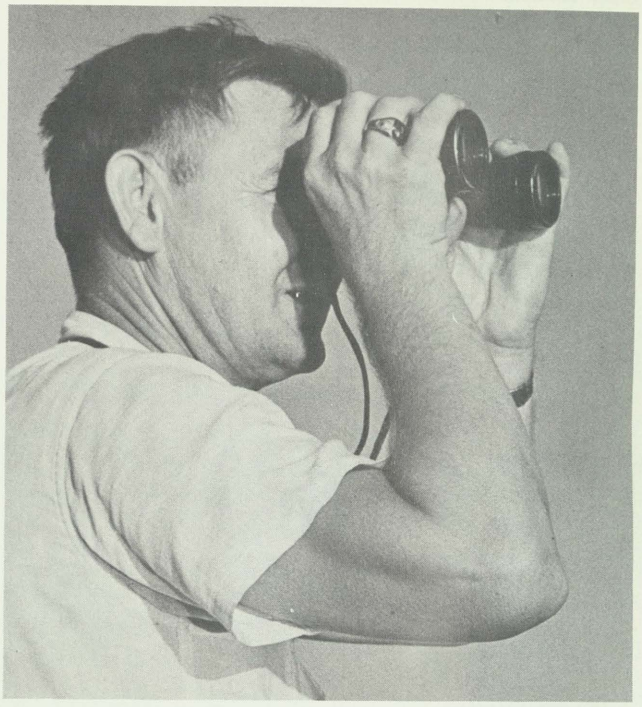


Photo by Bill Hansen

Add a set of quality screwdrivers, from watchmaker's matched set of miniatures to big blade, long shank versions capable of reaching deep into gunstock bolt recesses. Take care of them.

Binoculars: The hunter who uses binoculars regularly and efficiently will definitely see more game.

Don't make the mistake of purchasing a heavy instrument that will hang heavy from neck strap, or be bulky to carry afield. If you do, you will gradually fall into the habit of leaving your binoculars at home or in hunting camp, when you should have them with you.

I use and recommend Bushnell "Custom Compact" model binoculars of 7 × 26 optical designation. They weigh only 11 ounces and are so compact that I can carry them in my hunting coat pocket when I'm not wearing them around my neck ready for instant use.

Silva "Huntsman" Compass: You don't buy a pocket compass every hunting season, as you do ammunition, so get a good one.

I swear by my accurate, compact, lightweight, cover-closing Silva "Huntsman" model compass, with luminous needle points. The needle works on a sapphire jewel bearing in a liquid-filled transparent housing. You set the revolving dial to desired course and then simply follow "direction of travel" arrow.

With cover closed, a "Huntsman" model compass is only 2" × 1½" × ⅜" in size, and weighs just 2 ounces, yet the instrument is tailored to take hard knocks in active service.

Clothing and Footgear: I designed my hunting coat, and had it custom-made. Likely you have your own ideas about a hunting coat. Just get a *good* one.

In camouflage items, for cold weather wear, get yourself an "Antler" brand camouflage insulated coat, as made by M. Rubin Sons, 10 West 33rd Street, New York 10001, or closest equivalent in rival brand. For both hot days and quick conversion of any hunting outfit to camouflage, use a camouflage net material parka, with turn-up hood.

You definitely should wear quality, comfortable boots and shoes. There are many good brands, but for Florida you can't go wrong with Red Wing "Irish Setter" leather 9-inch boots and a supplementary pair of Converse "No Bite" combination leather and rubber boots, worn with pants legs outside.

I prefer the Converse model over the L. L. Bean "Maine Hunting" shoe because the Converse is lighter in weight per pair. Boots that weigh a pound more each than necessary will force you to lift an extra ton of weight every 2,000 steps. Just 8 ounces excessive weight per shoe will demand 1,000 pounds of extra lifting every 2,000 steps taken. And is the Converse "No Bite" model durable? I've had mine 13 years now. They show hard wear but are still sound.

Aluminum Frame Folding Stool: Most of the type are made of 1" diameter aluminum furniture tubing, painted dark green or olive drab, with underslung, zippered canvas storage compartment. For deer, duck, and dove hunting, these stools serve both as convenient, comfortable seat and carryall bag.

I highly recommend the L. L. Bean model, of square "O" closed frame construction, that resists seat-tilting "dig in" that so often occurs with a four-legged stool set on soft ground.

Seat and underslung carryall compartment are made of waterproof nylon canvas camouflage material that will take lots of hard use.

Adjust the carrying strap so that, when the strap is slipped over shoulder, the stool tends to find comfortable position beneath armpit.

Books and Special Publications: If you like and use guns, there are certain book titles you should definitely own. Their reading will add much to your knowledge and shooting pleasure.

In the home gunsmithing category, acquire *Gun Owner's Book of Care, Repair and Improvement,* by Roy Dunlap; *Home Gunsmithing,* by Tommy L. Bish, *NRA Gunsmithing Guide,* and Bob Brownell's *Gunsmithing Kinks.* These books will provide technical how-to information for any gunsmithing job you are ever likely to attempt, and are literally worth their weight in gold to a person who repairs or refurbishes firearms.

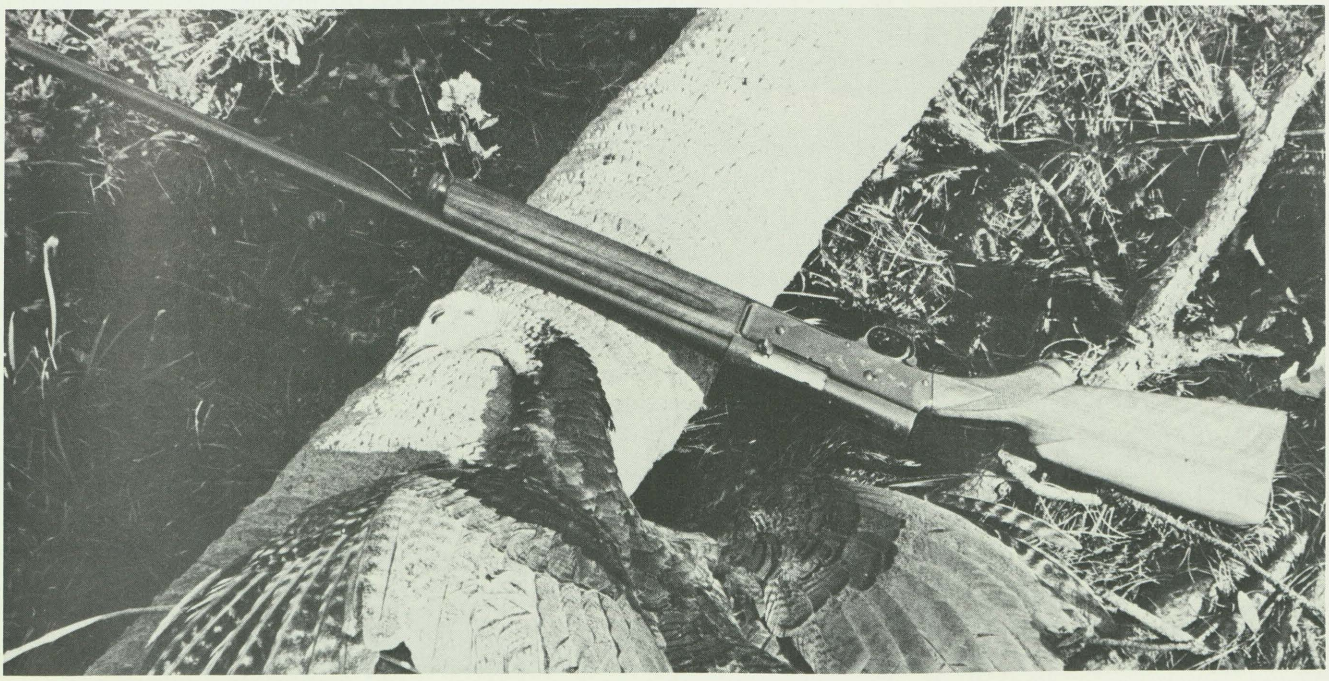
You should also have Robert Stack's *Shotgun Digest,* and the NRA's *Firearms and Ammunition Fact Book.* Any bookstore can order the titles from publishers if it does not already have them in stock.

Don't fail to subscribe to *The Shotgun News,* Hastings, Nebraska 68901. The semimonthly publication is a worldwide trading post for anything that shoots or pertains to shooting. Issues will provide you with highly interesting—and, quite likely, money-saving—reading, even though composition is totally display and classified advertising. I've been a subscriber for 29 years, yet I eagerly await the arrival of each new issue.

So long readers—and good hunting, this season and every year. ●

Binoculars are an invaluable aid to a hunter. Once you get used to using them, you'll consider them practically indispensable. For the Florida hunter, a 12-gauge shotgun is the most versatile hunting gun that you can own.

Photo by Gene Smith



MAKING the MOST of CAMP MEAT

WITH THE ARRIVAL OF ANOTHER hunting season, scores of outdoorsmen will be heading for campsites throughout Florida's wilderness to renew themselves amid nature's splendor. Aside from the obvious need to triumph as a hunter, one of the most important parts of an enjoyable camping trip is the preparation of meals in which freshly-killed game is the main attraction.

Contrary to popular opinion, camp meat need not be either tough or tasteless, but can be as deliciously satisfying as meals prepared in a modern, well-stocked kitchen. All it takes is a little imagination, a working camp stove, and a few basic ingredients, such as flour, onions, instant meat tenderizer, salt, pepper, and of course, the meat. A couple of envelopes of dried onion soup or chicken broth, beef or bouillon cubes, and some canned tomatoes, vegetables, and potatoes provide versatility and stretch a little meat a long way.

Since ease of preparation and adaptability are essential to planning camp meals, simple recipes are best. Besides frying, among the most popular methods of cooking camp meat are stewing, fricasseeing, and barbecuing. Once you've mastered the basic recipes, it is easy to adjust them to fit any situation.

Campfire Barbecue
(Or the Wiener Roast without the Wieners)

Any kind of game or wildfowl in serving portions
Salt and pepper
Barbecue sauce or garlic butter (if desired)
Bacon strips
Several long, sturdy green sticks (one per person), sharply pointed on one end
Toothpicks

To sharp end of stick, attach 1 steak, small bird, or serving portion of other game. Salt and pepper to taste; if desired, baste or dip in barbecue sauce or garlic butter. Wrap meat in 1 slice of bacon to keep moist, securing bacon with a toothpick. Rake some red-hot coals from the campfire to the edge of the fire and hold meat over coals, turning occasionally to cook evenly until desired doneness. For variety, omit bacon. (Hint: game birds are especially good when dipped in barbecue sauce.)

Fricasseed Squirrel
(Or Other Small Game)

1 squirrel (rabbit, etc.), dressed and disjointed into 6 or 7 pieces
1/2 cup flour
Salt
Pepper
3 slices bacon
1/2 medium onion, sliced or chopped
1-1/2 cups chicken broth (reconstituted from dried soup or bouillon according to package directions)
Instant meat tenderizer

Springle meat liberally with tenderizer and set aside. In medium or large skillet, fry bacon until crisp, remove and drain. Salt and pepper pieces of game to taste, dredge in flour and brown quickly in hot bacon fat. Reduce heat; add onions and cook till tender but not brown. Stir in crumbled-up strips of bacon and chicken broth, cover and simmer over low heat until meat is tender, about 1 hour. Serves 3 or 4. (Hint: this is delicious and goes farther when served over rice.)

Stewed Rabbit
(Or Other Small Game)

1 rabbit (squirrel, etc.), dressed and disjointed into 6 or 7 pieces
1/2 cup flour
1/2 tsp. salt
1/8 tsp. pepper
1/2 medium onion, chopped
1-1/2 cups chicken or onion soup (reconstituted from bouillon or dried soup)
1 can tomatoes
1 can potatoes, whole or sliced
1 can mixed vegetables
1/4 cup cooking oil
Instant meat tenderizer

Sprinkle meat liberally with tenderizer and set aside 10 to 15 minutes. Mix flour, salt and pepper and dredge meat in mixture. In skillet, brown meat quickly in hot cooking oil; add onions and cook till barely tender. Stir in broth and tomatoes; cover and cook over medium-low heat about 20 minutes. Add potatoes and vegetables, cover and simmer over low heat until meat and vegetables are tender, about 30 minutes. Serves 4.

By KATHLEEN N. LAMARCHE

**Venison Liver and Heart with Onions*

1 venison heart and liver, trimmed and sliced into 1/2 inch strips
2/3 cup flour, more or less
1/2 teaspoon salt
1/4 teaspoon pepper
1 or 2 large onions, cut and sliced
3 pieces bacon
1 cup water, more or less

Fry bacon in skillet until crisp, remove and drain. Mix flour, salt and pepper and dredge meat slices in mixture, covering all sides. In hot bacon drippings, sear meat quickly on all sides to seal in juices, remove and set aside. Add onions to skillet and cook till barely tender; return meat to skillet, add just enough water to cover meat, stir in crumbled-up bacon. Cook over medium-low heat about 25 minutes, stirring occasionally. Serves 8. (Hint: this is delicious served over rice.)

*To prepare for cooking, split heart and thoroughly wash out the center, trimming away white connective tissue and artery tissue. Liver should be trimmed of white tissue also, and for added tenderness, cut away outside skin covering. Heart and liver are best cooked when fresh.

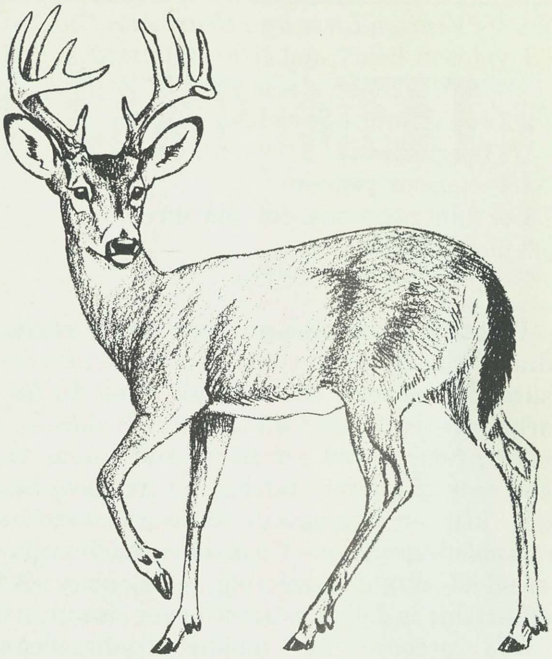
Crispy-fried Venison

1 to 2 lbs. venison, trimmed of fat and cut in fingersized pieces
2/3 cup flour, more or less
Salt and pepper
Vegetable oil
Instant meat tenderizer (optional)

Salt and pepper individual pieces of meat to taste and sprinkle with tenderizer, if desired. Dredge meat thoroughly in flour, completely covering all sides. In very hot cooking oil, deep fry meat quickly until golden brown all over, being careful not to overcook. Remove, drain, and serve. Makes 4 to 6 servings. (Hint: fried meat loses its tenderness when cooked too long.) ●

Photo by Gene Smith

HOW TO AGE WHITE-TAILED DEER



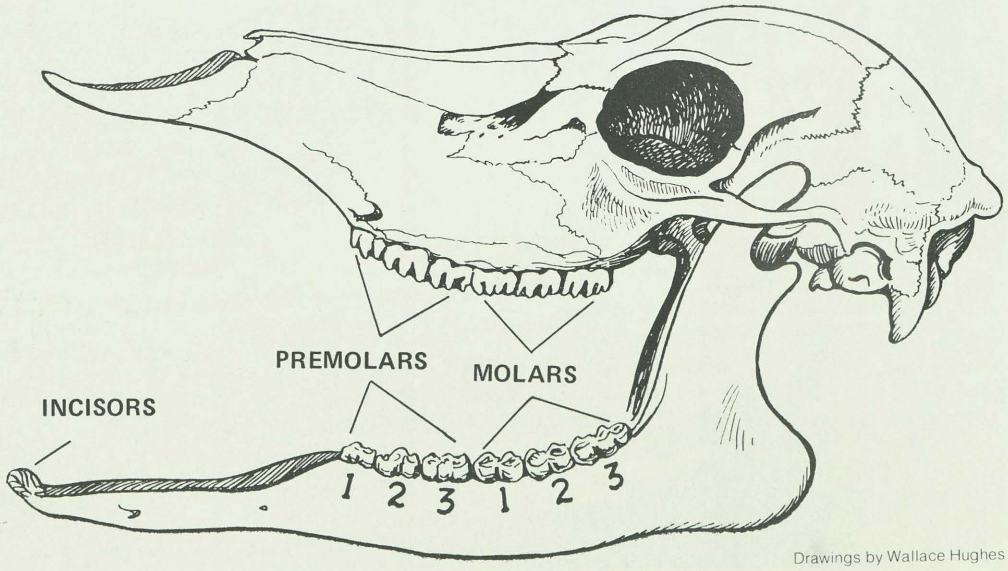
By RICHARD HARLOW

If a deer herd is to remain stable, the annual increase of young stock must at least equal the total losses of adults, or if it is to increase, must exceed the adult die off. By knowing the proportion of the various age classes among the adults present, one may determine the average life span as well as past reproductive success. Once the normal patterns of these population fluctuations are learned, more adequate regulations and management practices may be recommended.

Theoretically, when a legal spike buck law is in effect, the 1½ year age class should show up as the largest age class in the kill, with the 2½ year old age class next and so on down the line. When the 2½ year age class is greater than the 1½ age class, it is usually due to many yearling bucks lacking legal sized spikes, declining reproduction, or a difference in the peak period of fawn drop, or a combination of these and other factors. A declining population usually shows a high proportion of old animals while a stable population shows a more even distribution of age classes, and an increasing population shows relatively large numbers of young individuals. The aging technique is taken from "Tooth Development and Wear As Criteria of Age in White-Tailed Deer" by C. W. Severinghaus, published in the Journal of Wildlife Management, 1949a. 13(2): 195-216.

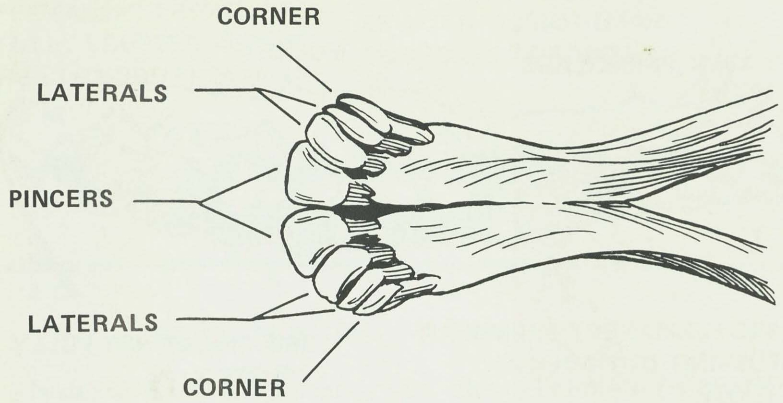
DEER SKULL

CONDITION OF TEETH OF THE LOWER JAWBONE IS STUDIED TO DETERMINE AGE OF THE DEER



Drawings by Wallace Hughes

INCISORS



At age up to 12 months, the study of the incisors can aid in determining the age of the fawn deer. During the fifth months of age, the fawn loses the two middle incisors (milk or deciduous pincers). By age 10 months, the permanent pincers are fully erupted. Milk or deciduous lateral and corner incisors are replaced with permanent teeth during the tenth or eleventh month. At age 12 months and older, close study of premolars and molars is necessary to determine age of deer.

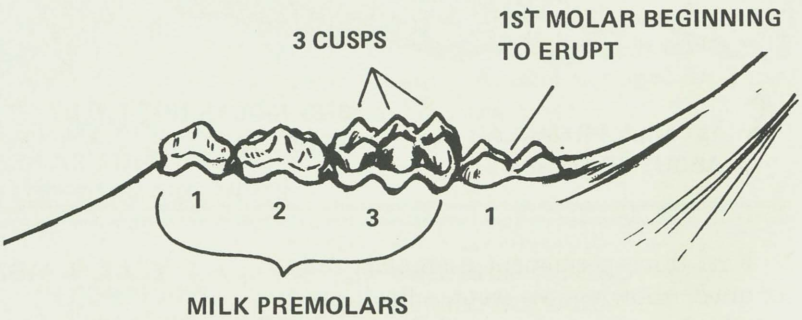
DENTAL AGE CHARACTERISTICS OF THE WHITE-TAILED DEER

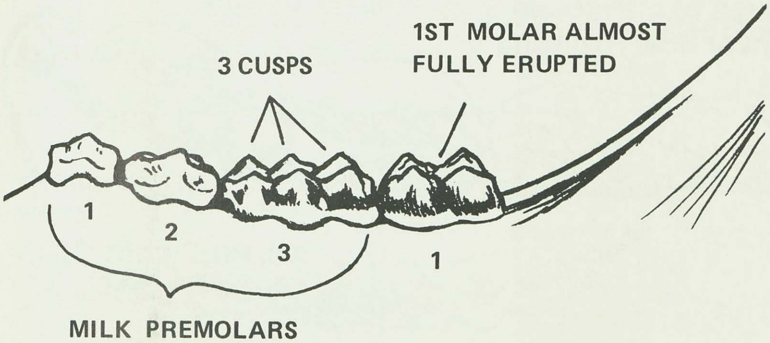
Drawings viewed from cheek side of lower jawbone Age class illustrations based on December kills

FAWN

3-4 MONTHS OLD

First premolars (milk teeth) fully erupted. First molar barely visible at gum line. At 4 months of age, fawn would be dropped in August and have been conceived in January.





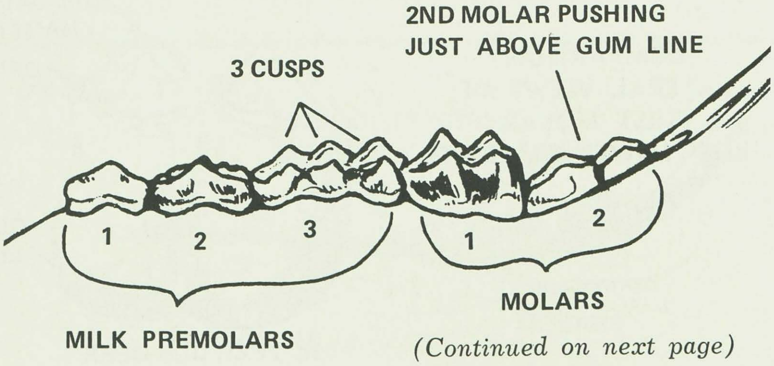
4-6 MONTHS OLD

First molar almost fully erupted, second molar not yet appearing above gum line. Animal dropped in June and conceived in November if six months old.

DRAWINGS BY MARLIN DEFOOR

7-9 MONTHS OLD

First molar fully erupted, crest of second molar barely showing above gum line. Milk teeth showing wear. If animal 9 months old, would be born in March and conceived in August.



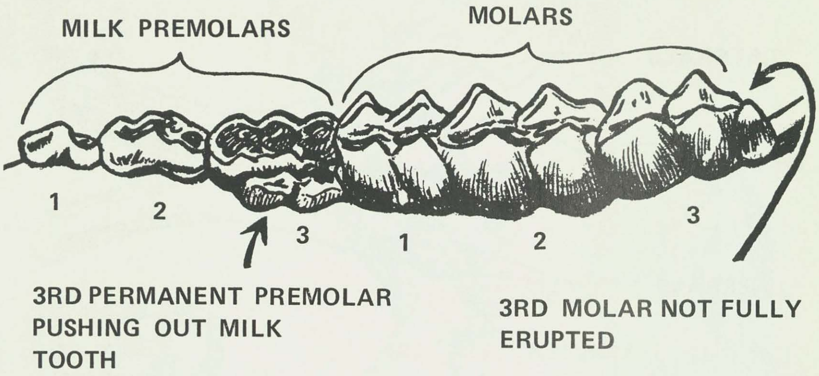
(Continued on next page)

1½-YEAR AGE CLASS (YEARLINGS)

(continued from preceding page)

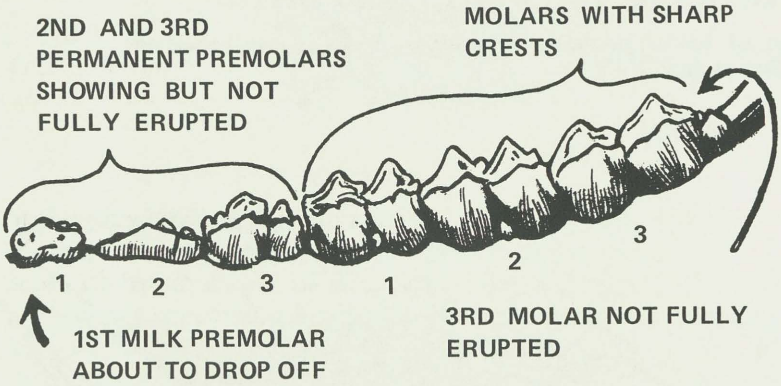
1 YEAR 5 MONTHS

First three premolars (milk teeth) showing considerable wear nearly to gum line. First and second molar teeth fully erupted with sharp crests. Third molar not fully erupted, last crest nearly hidden by gum line. Animal born in July, conceived end of December or January.


MILK PREMOLARS
MOLARS
1
2
3
1
2
3
3RD PERMANENT PREMOLAR PUSHING OUT MILK TOOTH
3RD MOLAR NOT FULLY ERUPTED

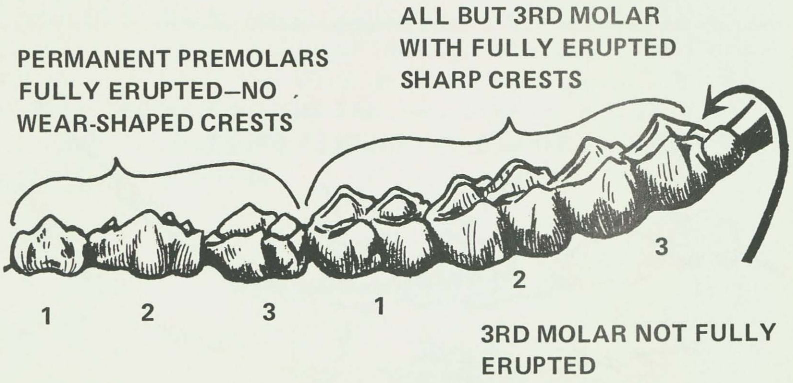
1 YEAR 6 MONTHS

First three premolars (milk teeth) shed and permanent premolars about ½ erupted. Back crest of third molar still hidden by gum. Crests of all molars sharp pointed. Animal dropped in June and conceived in November.


2ND AND 3RD PERMANENT PREMOLARS SHOWING BUT NOT FULLY ERUPTED
MOLARS WITH SHARP CRESTS
1
2
3
1
2
3
1ST MILK PREMOLAR ABOUT TO DROP OFF
3RD MOLAR NOT FULLY ERUPTED

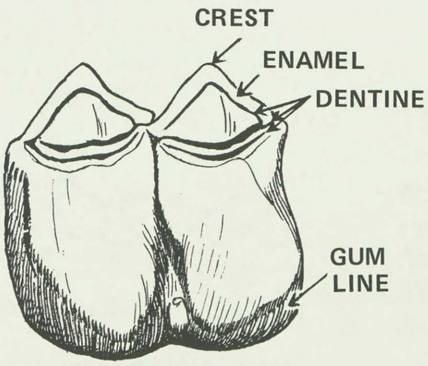
1 YEAR 7 MONTHS AND OLDER

First three permanent premolars fully erupted—showing no wear. Back crest of third molar still not fully erupted above gum line. Very slight wear visible on first molar. Animal dropped in May and conceived in October. (It is possible that in some areas of the State a fairly sizable number of fawns may be dropped during late January or February and show up heavy in the December kill. If deer of this age class are placed in the 2½ year age class instead of the 1½ like they should be, a distorted picture of fawning success may result.)

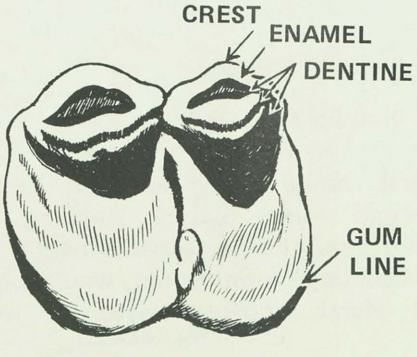

ALL BUT 3RD MOLAR WITH FULLY ERUPTED SHARP CRESTS
PERMANENT PREMOLARS FULLY ERUPTED—NO WEAR-SHAPED CRESTS
1
2
3
1
2
3
3RD MOLAR NOT FULLY ERUPTED

COMPARISON LATERAL VIEWS OF FIRST MOLAR FROM LOWER JAWBONE

DRAWINGS By
MARLIN DEFOOR



1½ YEAR OLD DEER

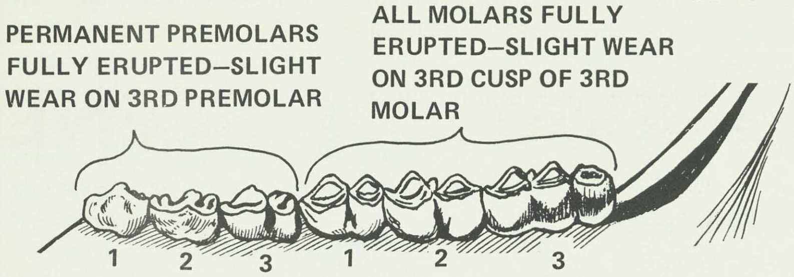


3½ YEAR OLD DEER

ADULT

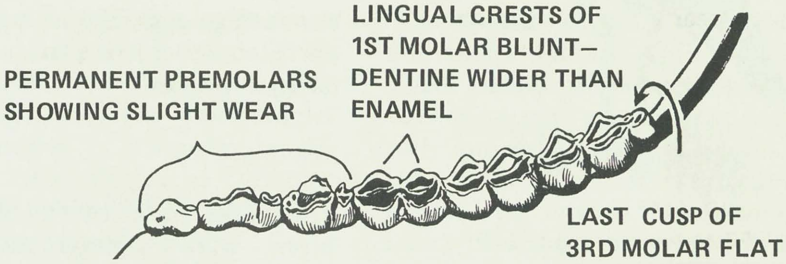
2 YEARS 6 MONTHS

All permanent premolars and molars fully erupted. Crests of first three premolars showing slight wear. Slight wear on first molar. Animal dropped in June, conceived in November.


PERMANENT PREMOLARS FULLY ERUPTED–SLIGHT WEAR ON 3RD PREMOLAR
ALL MOLARS FULLY ERUPTED–SLIGHT WEAR ON 3RD CUSP OF 3RD MOLAR
1
2
3
1
2
3

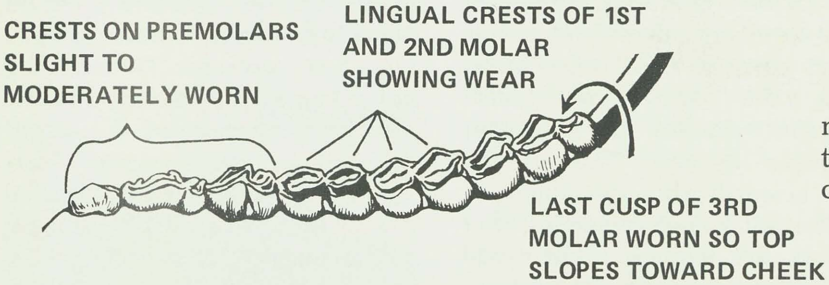
3 YEARS 6 MONTHS

Noticeable wear appearing on first three premolars. Substantial wear on first molar and slight wear on second molar. Most posterior crest on third molar showing wear. Animal dropped in June, conceived in November.


PERMANENT PREMOLARS SHOWING SLIGHT WEAR
LINGUAL CRESTS OF 1ST MOLAR BLUNT–DENTINE WIDER THAN ENAMEL
LAST CUSP OF 3RD MOLAR FLAT

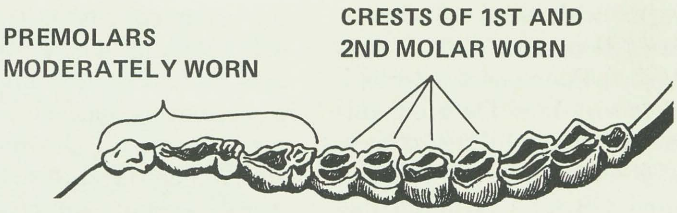
4 YEARS 6 MONTHS

Substantial wear on first and second molars. Only slight wear on crest of third molar. Animal dropped in June, conceived in November.


CRESTS ON PREMOLARS SLIGHT TO MODERATELY WORN
LINGUAL CRESTS OF 1ST AND 2ND MOLAR SHOWING WEAR
LAST CUSP OF 3RD MOLAR WORN SO TOP SLOPES TOWARD CHEEK

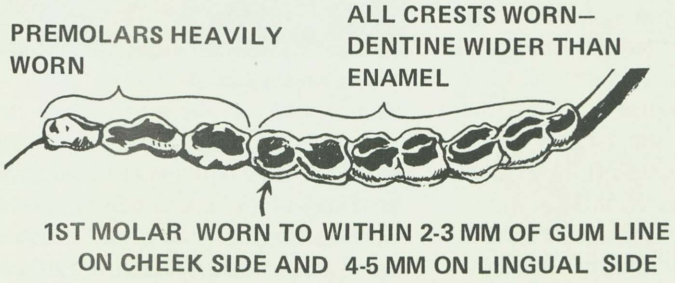
5 YEARS 6 MONTHS

Considerable wear on first molar. Dentine wider than enamel on all teeth. Only a slight crest noticeable on third molar. Wear on all teeth. Animal dropped in June, conceived in November.



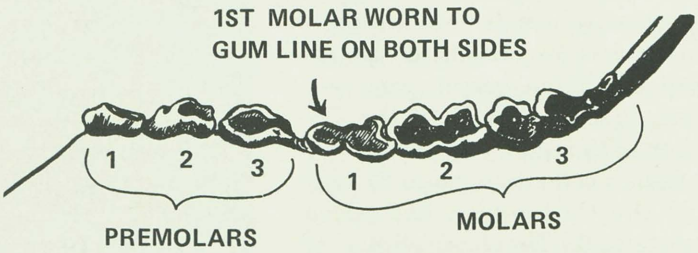
7 YEARS 6 MONTHS

No crests showing on premolars or molars. Dentine wider than enamel on all teeth. Animal dropped in June, conceived in November. First molar worn to within 2-3 millimeters of gum line on cheek side and 4-5 millimeters on tongue side of jaw.


PREMOLARS HEAVILY WORN
ALL CRESTS WORN–DENTINE WIDER THAN ENAMEL
1ST MOLAR WORN TO WITHIN 2-3 MM OF GUM LINE ON CHEEK SIDE AND 4-5 MM ON LINGUAL SIDE

OVER 10 YEARS

Age of deer now estimated by the amount of enamel showing above gum line. Measurement in millimeters. At 10½ years of age, first molar worn to gum line, no crests, dentine much wider than enamel on all teeth. Premolars and molars worn to within 2-3 millimeters of gum on cheek side and 2-5 millimeters on tongue side.



CONSERVATION SCENE

Editor Moves On

GENE SMITH, *Florida Wildlife* editor since March 1974, has packed his pencils, style manual, and the rest of his editorial paraphernalia and headed up to Edgefield, S.C. He has assumed editorship of *Turkey Call*, bimonthly publication of the National Wild Turkey Federation.

Gene has been with the Commission since 1959 when he went to work with the Fisheries Division's lake and stream survey project. Four years later, he moved to the I&E Division and served as regional I&E officer, first at Panama City and then at Lakeland. Since 1967 he has been a staffer with *Florida Wildlife* and the Publications Section, serving as editorial assistant, associate editor, and finally as editor.

During his time at the helm of the Commission's magazine, Gene not only upheld the high standards set by long-time editor Bill Hansen but succeeded in launching a number of innovations which will go far toward helping make *Florida Wildlife* an even better, more interesting and informative conservation publication. His projections for the future of the magazine were set forth in an editorial in the October 1976 issue.

Gene's contributions to Florida and the Commission have been substantial. The best wishes of the staff go with him as he turns his talents to a new phase of outdoor publishing.

Bird Count

A GRAND TOTAL OF 124,651,593 birds were sighted in last winter's Christmas Bird Count by 28,688 qualified observers who were organized into teams which covered 1,141 count areas from the Arctic to South America, reports the National Audubon Society. This unique and scientifically valuable annual event has grown so big that it took six months to edit and compile the data this year.

Each team makes a search of its assigned count area during one calendar day of the Christmas holiday season and compiles a species-by-species list of the numbers of all the birds it can find. (Where possible, the species count is exact; for large rafts of waterfowl, huge flocks of gulls, etc., careful estimates are made.) The 1,141 lists are being published in a fat issue of *American Birds*, the Society's ornithological journal; non-subscribers may buy this issue for $4.50 a copy from the Society, 950 Third Avenue, New York, N.Y. 10022.

The findings range from zero to the millions. Point Barrow, Alaska, was the zero; that team didn't find a single bird. Catemaco, in Vera Cruz, Mexico, spotted more species than anyone else (293), and Squaw Creek National Wildlife Refuge, Missouri, with a huge concentration of wintering blackbirds, had the highest total of individual birds, 38,568,401, although this represented only 58 species.

The Cocoa, Florida, team ranked 5th in number of species reported. Forty-four other U.S. teams, in communities from Maryland to California, listed 150 or more species, but as was to be expected, the highest totals were posted by teams south of the border in lands to which many North American birds migrate for the winter.

Outstanding Wildlife Officer

Officer Walsingham

WILDLIFE OFFICER RONNIE WALSINGHAM, currently assigned to Hernando County in the South Florida Region, has been selected as Outstanding Wildlife Officer of the Year. Professionalism, confidence, productivity, and judgment are among the qualities upon which the annual recognition award is based. Walsingham was selected from a group of outstanding officers representing each of the state's wildlife management regions.

Walsingham started his career with the agency in 1972. While in the Commission's recruit training school he distinguished himself, at considerable risk to his own well-being, by carrying a driver away from a burning fuel truck. For this act he received the Commission's Distinguished Service Citation.

Other outstanding wildlife officers in the final selection group for the award included Joel David Gibson, Northeast Region; James S. Brantley, Northwest Region; W. David Thompson, Everglades Region; and Robert W. Raulerson, Central Region.

Control of Exotics

THE U.S. FISH AND WILDLIFE SERVICE has announced plans to step up control efforts on the importation of injurious fish and wildlife species into the United States. A revised list of "high risk" species, plus appropriate legislation, make up the new approach.

The introduction of an exotic may take place accidentally or deliberately. Animals can escape from cages or containers in transit, while being processed through customs checks, while in pet stores or zoos, or while being held by private owners. Many exotic birds are first noted in the vicinity of major airports. Aquatic organisms sometimes escape when holding or breeding ponds flood or leak. Deliberate introductions are often made by persons hoping to establish populations of game species or to provide some control for pest species.

Examples of injurious wildlife species introduced into parts of North America are the walking catfish, African clawed frog, mongoose, Japanese oyster drill, starling, red-whiskered bulbul, monk parakeet, and grass carp; there are many more.

Present regulations that implement a portion of the Lacey Act of 1900 restrict the importation of only a few species of foreign wildlife (mammals, birds, reptiles, amphibians, fish, mollusks, and crustaceans). The importation of the overwhelming majority of exotic species does not come under the jurisdiction of the Lacey Act.

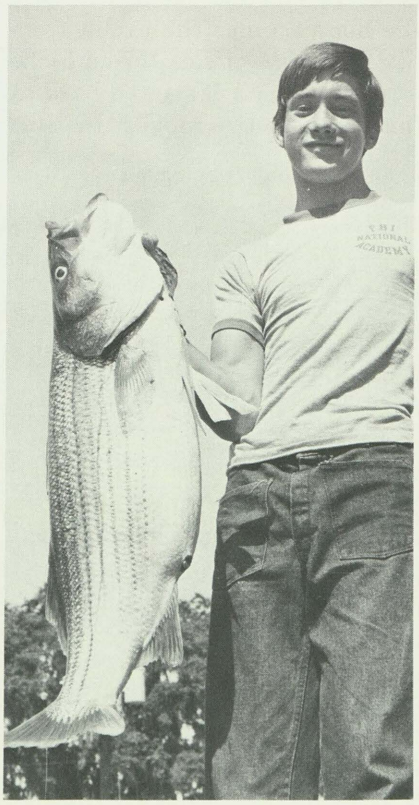
Record Striper

A 22-POUND STRIPED BASS landed by Wayne Italiane, Ft. Lauderdale, is recognized as the current Florida state hook and line record. The trophy fish was taken on the Ochlockonee River just below the Talquin dam on June 18, 1976. The young angler was guided to his prize by his uncle, Al LaMarche of Tallahassee. A white-bodied Sureketch grub lure turned the trick.

Although larger stripers have occasionally been reported taken from Florida waters, thus far the 22-pounder is the heaviest registered under the rules of the state record recognition program, detailed in the June 1976 issue of Florida Wildlife.

An exceptionally large longnose gar, caught by Larry Crossman, also of Ft. Lauderdale, was disqualified from record consideration because the entry had not been certified by G&FWFC personnel as required under the rules of the state record program. The big gar was taken on a shiner from an unnamed lake in Brevard County. It reportedly weighed in at 37-pounds and measured 61-inches total length and 21½ inches in girth.

Italiane and Prize Catch



National Parks Improvements

A 10-YEAR PROGRAM to expand and rehabilitate the Nation's National Parks, wildlife refuges, recreations areas, urban parks, historic and archeological sites has been launched under President Ford's $1.5 billion Bicentennial Land Heritage Program. The project got under way with an appropriation of $141 million for fiscal year 1977. The appropriation will provide $110 million to acquire lands in authorized areas of the National Park System, and $31 million to be used for acquisition of wildlife refuge lands.

Eleven areas of the National Park System will benefit from this fund request. They range from $627,000 to organize a land acquisition program and prepare initial land appraisals along the 2,000-mile Appalachian National Scenic Trail in the eastern states to $37.4 million to purchase the 49,534 acres of Texas' Big Thicket National Preserve not covered by previous budgeting. Also included is $30 million for Big Cypress National Preserve, Florida, a watershed vital to Everglades National Park.

Ray Sting Aid

A NEW FIRST AID KIT, "Sting Ray Eeze," which utilizes heat to control the severe pain and toxic effects caused by sting ray venom, has been announced by Amerex Laboratories, P.O. Box 32827, San Antonio, Texas 78216.

Designed primarily to relieve the intense pain inflicted by the sting ray, the kit contains an antiseptic and two "Fast Heet" packs.

(continued on next page)

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Canoe Trail Brochure

THE LONG-AWAITED *Guide to Florida Canoe Trails* is ready for distribution, Harmon Shields, executive director of the Department of Natural Resources, has announced.

Shields said the format of the canoe guide has been changed to a map brochure, detailing location of the state's 35 rivers and streams designated as trails. "A brief, pertinent synopsis is keyed to each river on the map, and an enlarged map of popular trails accompanies the descriptions," he said.

The easy-to-use brochure also gives map sources for canoeists wishing more detailed information and canoe tips. Cities where canoe rentals may be made are also listed.

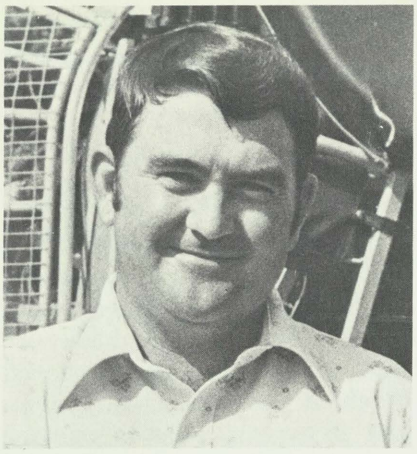
Copies of the canoe guide may be obtained free from the Department of Natural Resources, Room 321, Crown Building, Tallahassee, Florida 32304.

Award Winner

CORVIL JUSTENSEN, marine mechanic with the Commission's aquatic weed control section, has been presented a $900 State Employees Suggestions Award check for his suggestion regarding powering the agency's weed-sprayer air boats.

In an initial test of the idea, Justensen installed a Cadillac automobile engine as a replacement for the aircraft engine commonly used on air boats. The immediate savings was substantial—a $900 automobile engine compared with about $3,500 for an aircraft power plant. The results of this testing were excellent and Justensen submitted the idea for consideration by the awards board.

Justensen's cash award represents about 10 per cent of the estimated savings to the Commission in the first year of putting the idea into practice. Besides initial cost, maintenance is expected to be much lower. Labor costs for repair work should drop substantially as auto mechanics are much easier come by than qualified aircraft engine specialists.



Justensen

New Game—"The Chase"

RECENTLY WE HAD THE OPPORTUNITY to check out an interesting new game called "The Chase." The large playing board pictures a colorful array of Florida wildlife. Object of the game is centered on a hound and rabbit chase through the wild kingdom of the Florida Everglades. It starts at the point where the hound jumps the rabbit from his form and circles through the forest, around a lake, and back to the finish at the rabbit's nest. It involves rolling dice to advance through a series of situations to the finish point. A guide book details much wildlife information. Sounds like a good Christmas gift idea. This is a nature study game that could get a budding naturalist off to a good start. Available from Chet Chentnik, Games Unlimited, Inc., 7916 Skipper Lane, Tallahassee, Florida 32301.—*M.N.*

Burning Permit Required

SECTION 590.12, FLORIDA STATUTES, has been amended to read: "It is unlawful for any person, either willfully or carelessly, to burn or cause to be burned, or to set fire to or cause fire to be set to, any forest, grass, woods, wild lands, or marshes, or vegetative land clearing debris owned or controlled by such person without first obtaining authorization from the Division of Forestry."

Failure to obtain authorization to burn can be punished by a maximum sentence of a $500 fine and 60 days in jail, says Dee Paffos, Panama City. Landowners may obtain a burning authorization permit free of charge from any Division of Forestry field office or from their local forest fire control unit, either in person or by telephone.

Get a Permit before doing this

1976 Hunting Season Information 1977

RESIDENT GAME

SHOOTING HOURS

One-half hour before sunrise to one-half hour after sunset. Spring Turkey Season: One-half hour before sunrise to 1:00 p.m.

Species	Northwest Region	Other regions	Limits		
			Daily	Season	Possession
Deer	Nov. 13–Jan. 23	Nov. 13–Jan. 9 (local exceptions)	2	3	3
Turkey	Nov.13–Jan. 23 (local exceptions)	Nov. 13–Jan. 9 (local exceptions)	1	2	2
Turkey Gobbler (Spring Season)	Mar. 19–Apr. 10	Mar. 5-–Mar. 27 South of SR 50 Mar. 12–Apr. 3 North of SR 50	1	2	2
Quail	Nov. 13–Mar. 6	Nov. 13–Feb. 27	12		24
Squirrel	Nov. 13–Mar. 6	Nov. 13–Feb. 27	10 Gray 2 Fox		20 Gray 4 Fox
Rabbit	Open Year-round		10		20

Wild hogs; Nov. 13–Jan. 9 in Palm Beach and Alachua counties, part of Levy County, and on designated wildlife management areas. Daily limit 1; possession & season limit 2. **Bear** may be taken in Baker and Columbia counties, and on Tyndall Air Force Base in Bay County, during the established open season for taking deer; and by special permit on designated management areas. Limit 1 per season.

MIGRATORY GAME

SHOOTING HOURS

Shooting hours for migratory game birds (except doves) 12-noon opening days; one-half hour before sunrise to sunset thereafter. Dove hunting from 12-noon to sunset.

Species	Statewide	Daily Bag Limits	Possession Limits
Dove (3 Phase)	Oct. 2–Oct. 31 Nov. 13–Nov. 28 Dec. 18–Jan. 10	12	24
Snipe	Nov. 13–Feb. 27	8	16
Woodcock	Dec. 18–Feb. 20	5	10
Duck	Nov. 24–Dec. 6 Dec. 15–Jan. 20	100 Points	2 Legal Daily Bag Limits
Coot	Nov. 24–Dec. 6 Dec. 15–Jan. 20	15	30

For Further Information Consult 1976-77 Rules and Regulations Summary Booklet Available at Tax Collectors and Florida Game and Fresh Water Fish Commission Offices

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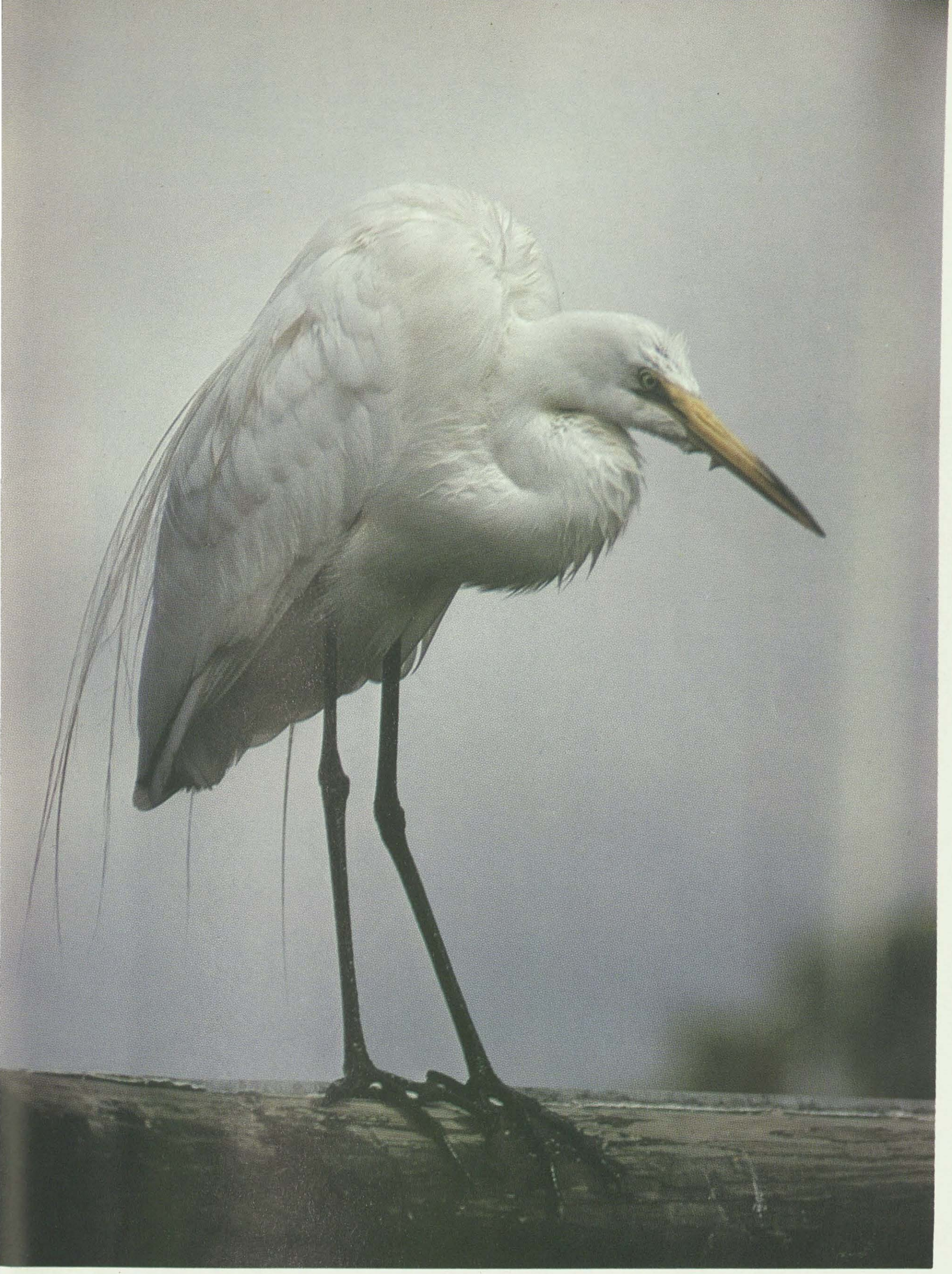


COMMON or AMERICAN EGRET, Above and below

A look at the Heron Family—

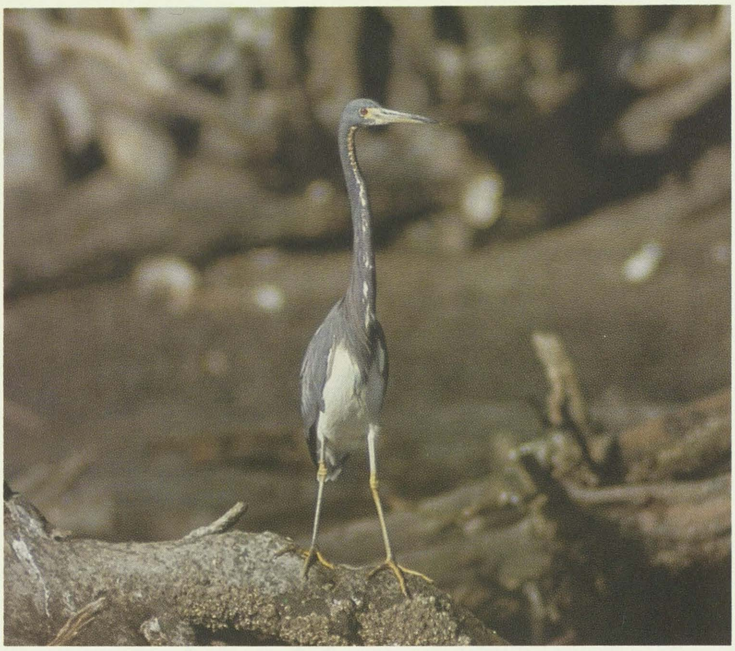
Winged Beauties Of Florida's Water World

Photos by Jim Greene
unless otherwise indicated

(continued on next page)

Florida is blessed with a great quantity and variety of watery habitats, ranging from tiny trickles coursing jungle thickets of wax myrtle and ti-ti to vast open boggy prairies. It's of little wonder that we also have an array of long-legged wading birds that fit into these various types of wetlands. To the casual outdoorsman, the all encompassing name "crane" may be good enough to identify the group. To those of a more probing mind, simply crane, pond scoggin, squawk, or shikepoke won't do it. Here's a pictorial guide to the heron family that may help you sort out this confusing array of long-legged birds.

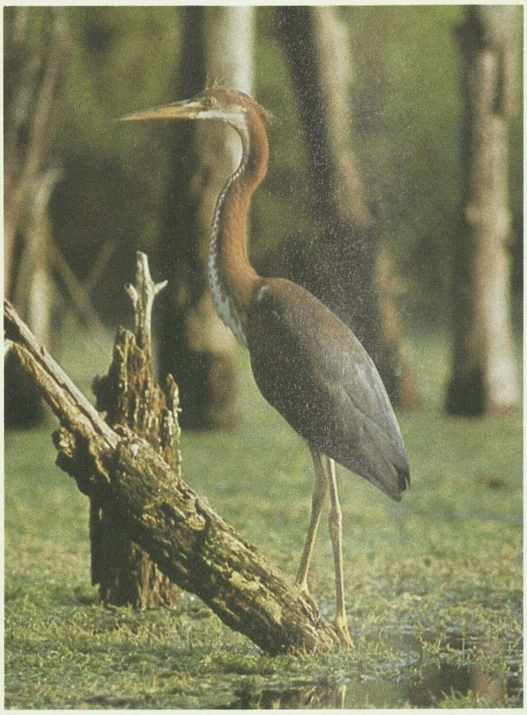
White plumage coupled with yellow bill and black feet and legs mark oft-encountered common or American egret, above and at right.



TRI-COLORED HERON, Adult

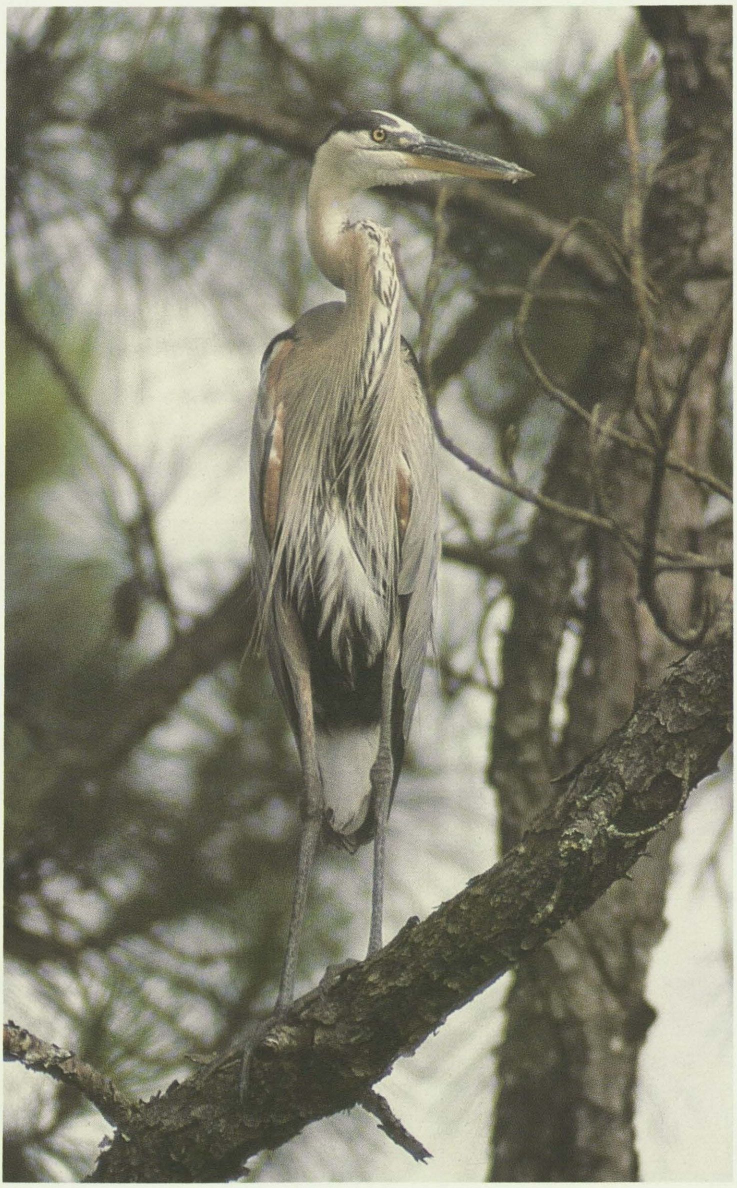
The tri-colored heron frequents the large coastal marshes. It is encountered less often inland. The great blue heron's large size—about 4 feet high—helps identify it. The cattle egret is an exotic that's now at home here. It has a short neck and a short heavy bill for an egret.

William A. Greer

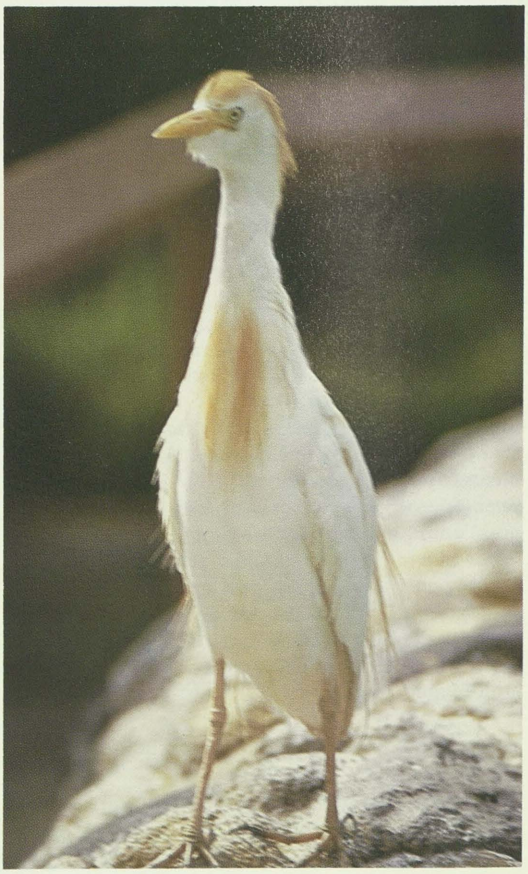


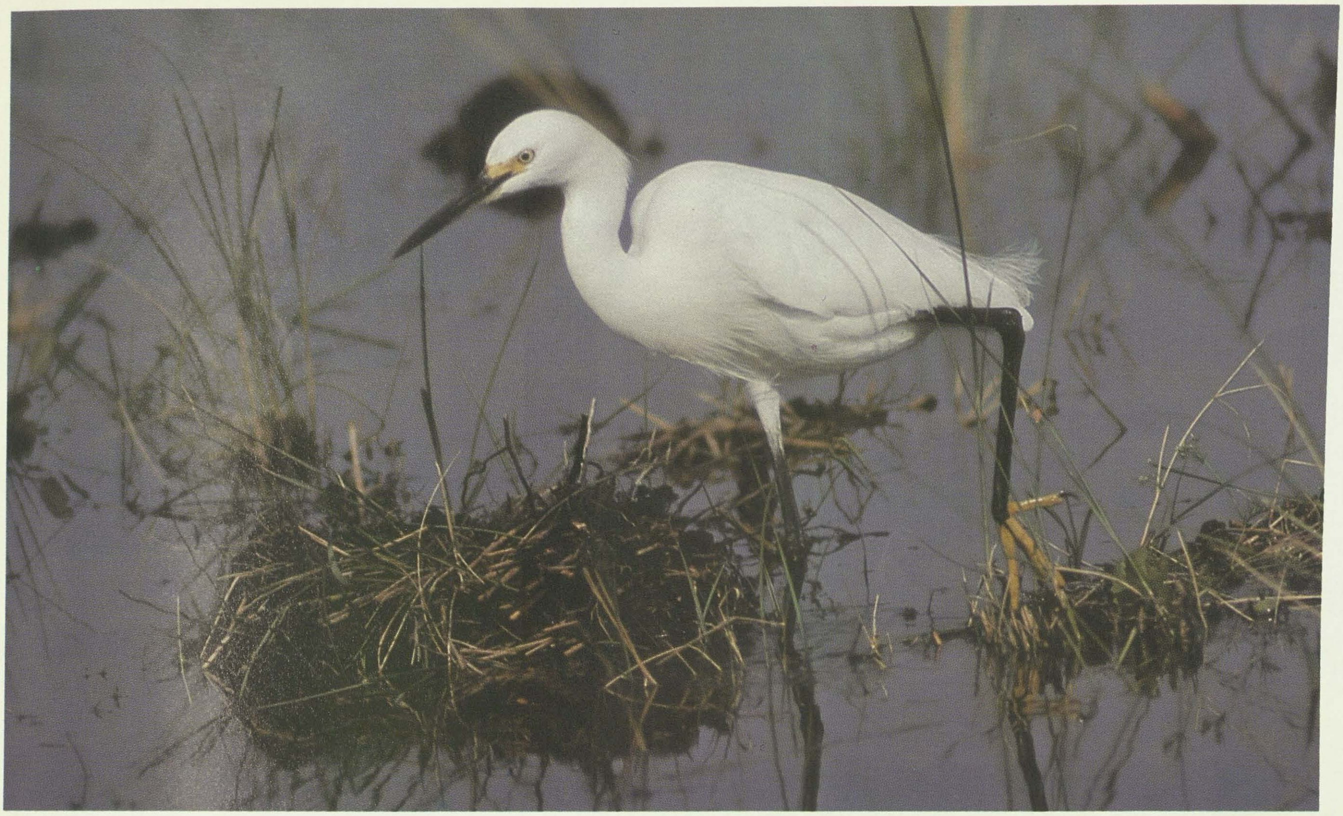
TRI-COLORED HERON, Immature

GREAT BLUE HERON



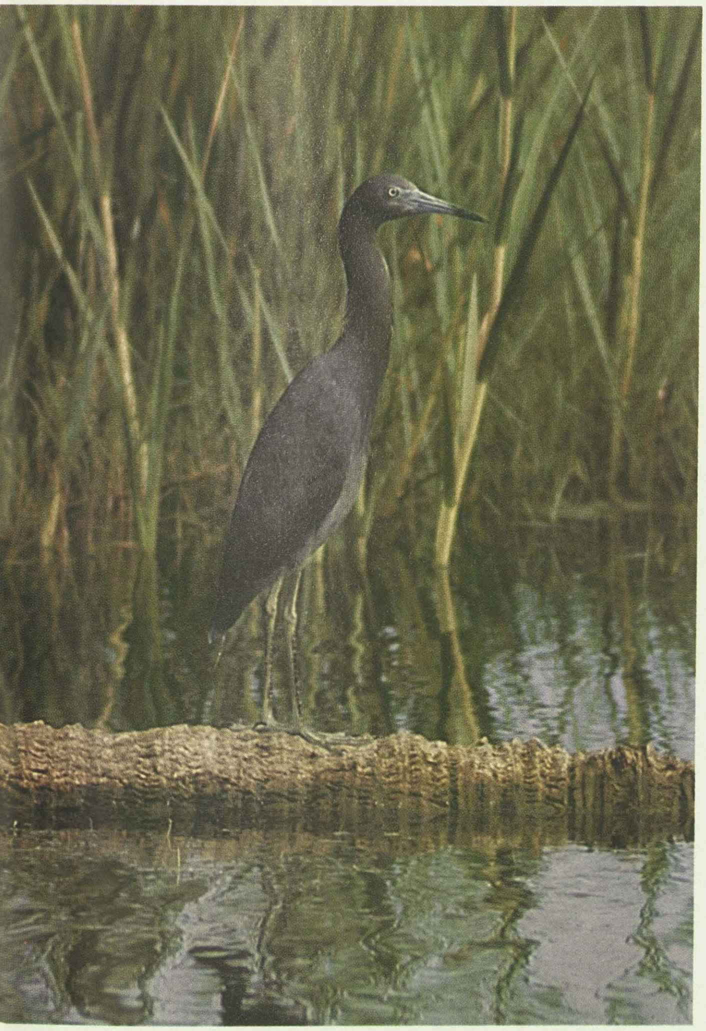
CATTLE EGRET

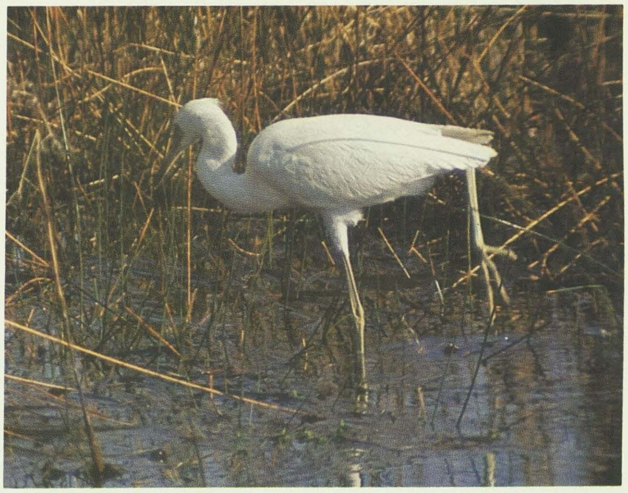




SNOWY EGRET

LITTLE BLUE HERON, Adult





LITTLE BLUE HERON, Immature

Wallace Hughes

Along with other species, the snowy egret was once avidly sought by plume hunters. It's a common bird in Florida. Its white plumage coupled with black legs and contrasting yellow feet readily identify it. The little blue heron is common on both salt and freshwater marshes. The slaty blue body coloration with a darker head and neck and bluish bill with a black tip make this species easy to identify.

Photos by Jim Greene unless otherwise indicated

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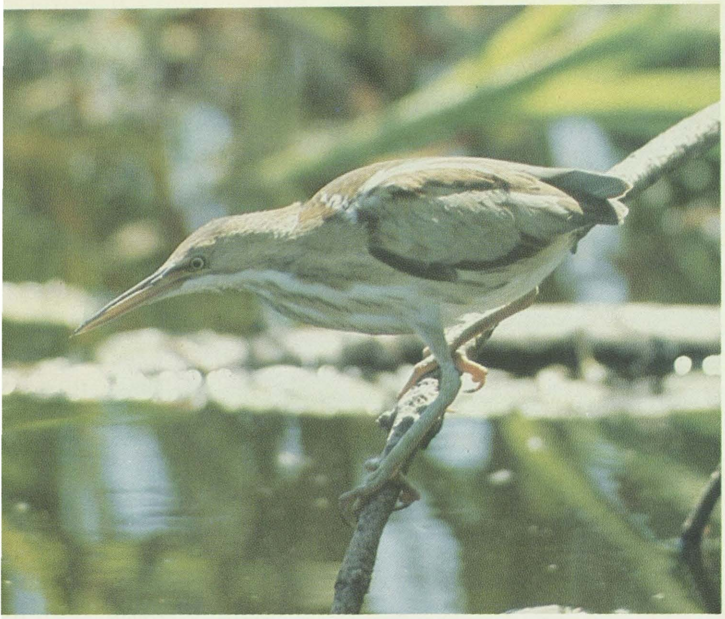


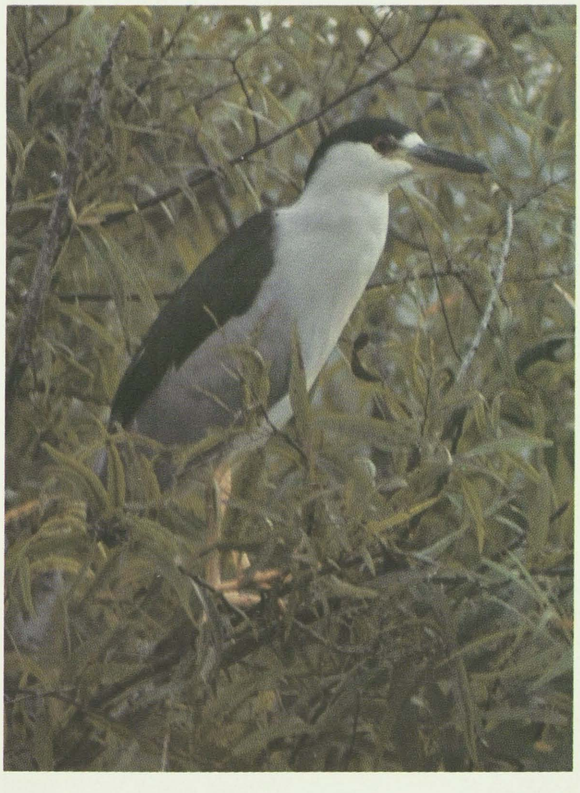
LEAST BITTERN

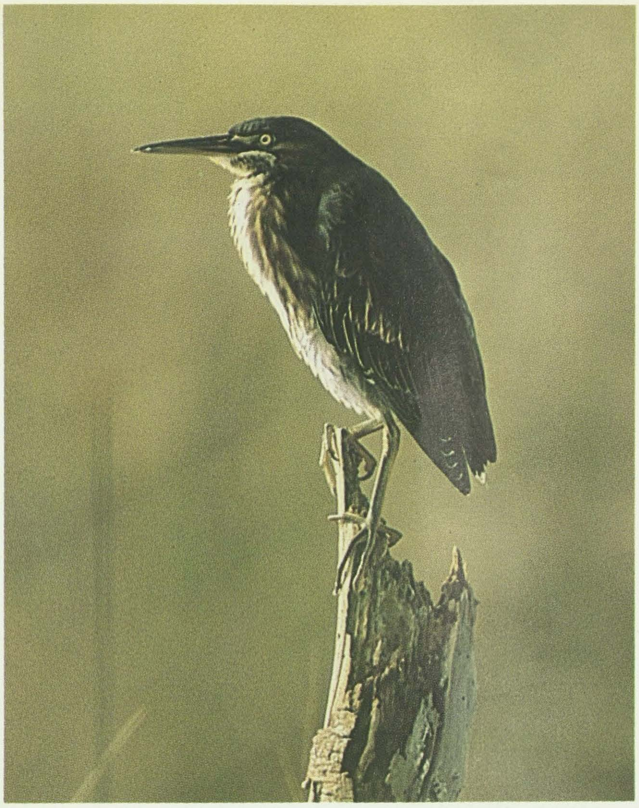
Harold Moeller

Smallest of our herons, the least bittern favors marshes with heavy stands of reeds, cattails, and similar growth. Another small heron, the green, is a widely distributed species, inhabiting both fresh and saltwater marshes throughout the country. The black-crowned night heron is active mainly during hours of darkness. The yellow-crown is frequently abroad during the day, actively seeking out crustaceans, such as crayfish and fiddler crabs, which it favors as food.

Photos by Jim Greene unless otherwise indicated

BLACK-CROWNED NIGHT HERON, Adult

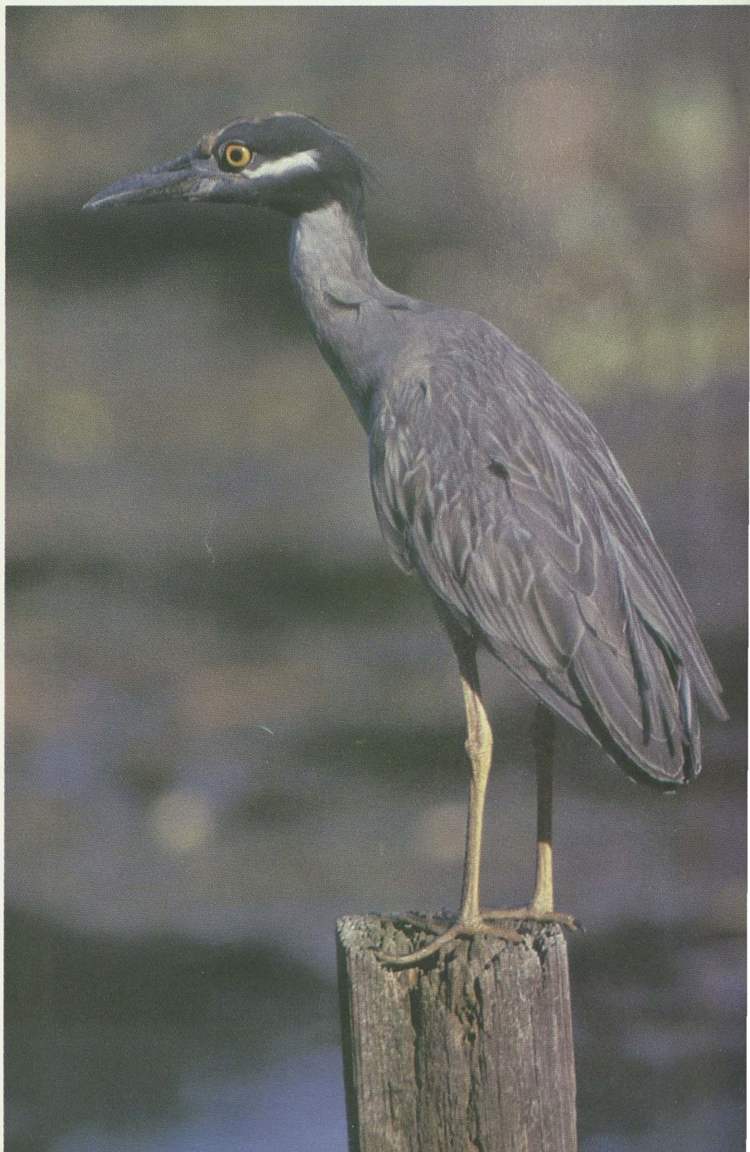


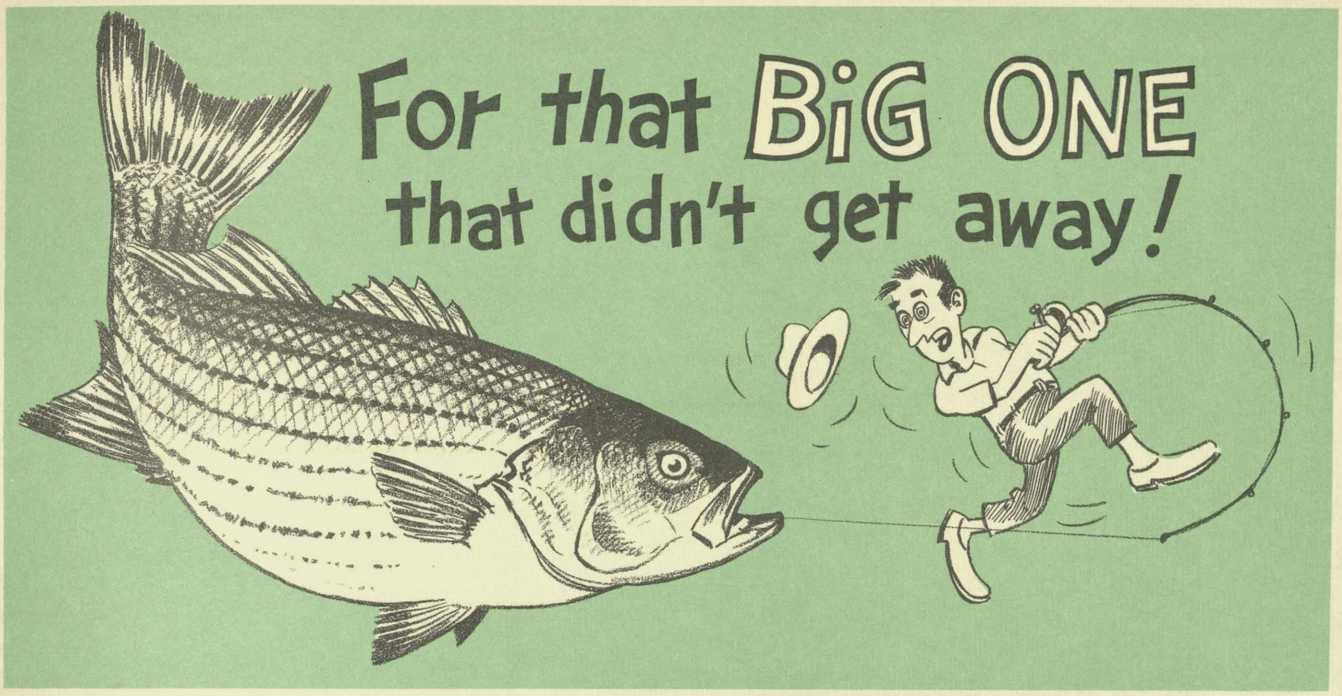


GREEN HERON

YELLOW-CROWNED NIGHT HERON, Adult

Lynn Stone





FLORIDA WILDLIFE'S
FISHING CITATION

is available without charge to subscribers to FLORIDA WILDLIFE Magazine and their immediate families who catch any of the listed freshwater fish of the prescribed minimum size. A citation for framing will be mailed to the applicant upon receipt of the following application form properly filled out and signed. Only those applications received within 90 days of the date of catch will be honored.

ELIGIBILITY REQUIREMENTS
SPECIES

LARGEMOUTH BASS	8 pounds or larger
STRIPED BASS	10 pounds or larger
CHAIN PICKEREL	4 pounds or larger
BLUEGILL (BREAM)	1 ½ pounds or larger
SHELLCRACKER	2 pounds or larger
BLACK CRAPPIE	2 pounds or larger
REDBREAST	1 pound or larger

TO BE ELIGIBLE . . .
all fish must have been taken from the fresh waters of the State of Florida, on conventional tackle, with live or artificial bait, in the presence of at least one witness. The catch must have been weighed and recorded at a fishing camp, tackle shop, or similar establishment, by the owner, manager, or an authorized employee. No citation will be issued for a record-sized catch unless fish was preserved for examination.

APPLICATION FOR FLORIDA WILDLIFE FISHING CITATION

The Editor, FLORIDA WILDLIFE Date____________
Game & Fresh Water Fish Commission, Tallahassee, Fla. 32304

Please send me the Florida Wildlife Fishing Citation with the inscribed data listed below:

Name (please print)____________________
Address ____________________
City__________ State________ Zip No.________
Species__________ Weight________ Length________
Type of Tackle____________________
Bait or Lure Used____________________
Where Caught__________ in________ County
Date Caught________ Catch Witnessed By__________
Registered, Weighed By__________ At________
Signature of Applicant____________________

CUT OUT AND SAVE THIS APPLICATION BLANK

SUNSET AT ST. MARKS NATIONAL WILDLIFE REFUGE, WAKULLA COUNTY Photo By Jim Greene

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